

THE JOURNAL of the Michigan State Medical Society

VOLUME 50

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NUMBER 6

Contributors To this Issue



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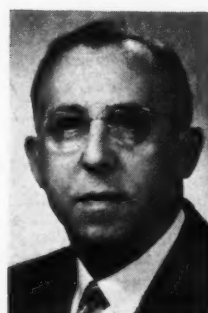
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Nathan Levitt, M.D.



Priscilla White, M.D.

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of the Michigan State Medical Society

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JUNE, 1951

NUMBER 6

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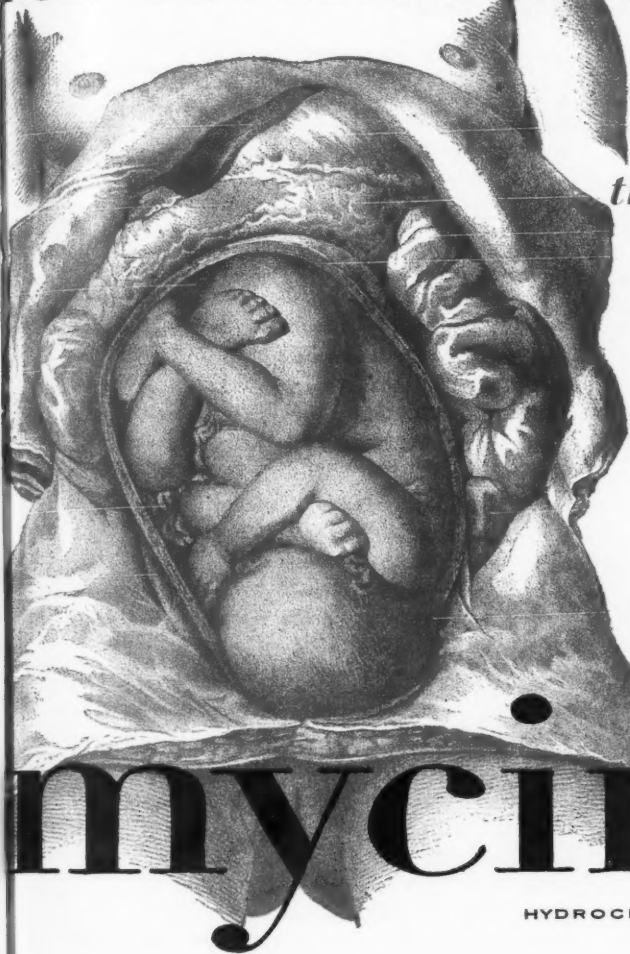


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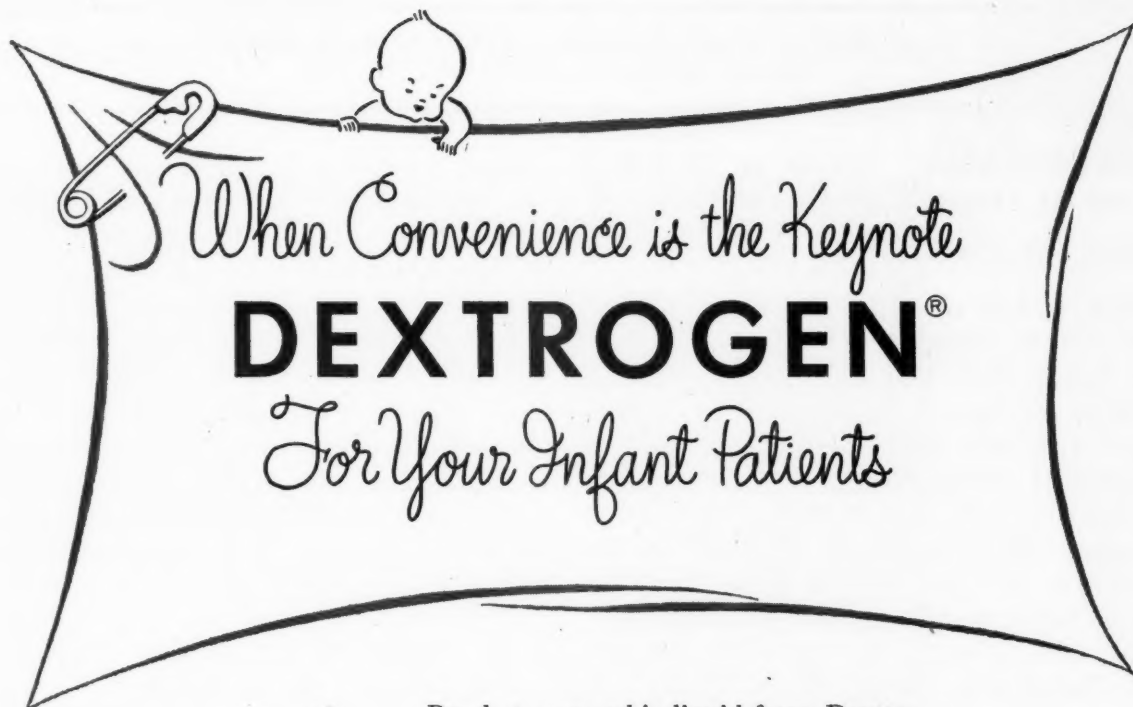
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MICHIGAN STATE MEDICAL SOCIETY ANNUAL SESSION, GRAND RAPIDS

September 26-27-28, 1951

Guest speakers who have already accepted include: A. H. Aldridge, M.D., New York City; A. C. Barnes, M.D., Columbus, Ohio; S. W. Becker, M.D., Chicago; W. P. Blount, M.D., Milwaukee; O. T. Clagett, M.D., Rochester, Minn.; A. I. Dodson M.D., Richmond, Va.; A. J. Horesh, M.D., Cleveland; Sara M. Jordan, M.D., Boston; J. W. Kernohan, M.D., Rochester, Minn.; Daniel B. Kirby, M.D., New York City; T. T. Mackie, M.D., Winston-Salem, N. C.; Alexander Marble, M.D., Boston; C. A. Moyer, M.D., Dallas; W. E. Nelson, M.D., Philadelphia; E. M. Papper, M.D., New York City; W. J. Potts, M.D., Chicago; Stephen Rothman, M.D., Chicago; E. L. Sevringhaus, M.D., Nutley, N. J.; R. H. Smithwick, M.D., Boston; F. H. Top, M.D., Minneapolis, Minn., and H. L. Williams, M.D., Rochester, Minn.

CONFIDENTIAL COMMUNICATIONS

The State Social Welfare Commission is co-operating with the Michigan State Medical Society in adding to its forms, to be signed by clients, a phrase so that the attending doctor of medicine is legally immune from prosecution for divulging a confidential communication when such information is requested by the Social Welfare Department. The forms or questionnaires of the Welfare Department will indicate a release, similar to that used by insurance companies in identical cases.

Although the so-called privileged communication is merely a rule of evidence, the Michigan Medical Practice Act of 1899 includes a clause that the willful betrayal of a professional secret is unprofessional conduct. Only one case of record in the United States exists where the Supreme Court has held such an act is willful betrayal; moreover, the Supreme Court has held that not every disclosure is willful betrayal. Some attorneys have the opinion that the furnishing of information in public assistance cases is not the

willful betrayal of a professional secret and has no criminal aspect. However, the Michigan State Medical Society recommended that the Social Welfare Department forms, to be signed by their clients, should be devised so that the doctor of medicine is legally immune from prosecution for divulging a secret. The Welfare Commission expressed a willingness and eagerness to co-operate.

Future Welfare forms will follow the insurance company lead and contain a clause which will protect the doctor of medicine in divulging confidential information, when requested by the Social Welfare Agencies.

AID AMERICAN MEDICAL EDUCATION FOUNDATION

The MSMS Council urges support of this very constructive program, the most important ever undertaken by the medical profession. Each county or district medical society of Michigan has been urged to appoint an individual or committee to assume responsibility for stimulating interest in the Foundation and seeing that the largest possible number of physicians contribute promptly and generously.

Doctor, it is important that you get behind your American Medical Education Foundation.

SELECTION OF MICHIGAN'S FOREMOST FAMILY PHYSICIAN

The following technique to select the doctor of medicine to receive this annual award has been approved by the MSMS Council: (1) notification to all county medical societies, with stipulation of June 30 as a deadline for nominations; (2) consideration by The Council of all nominations, with the selection of three names to be submitted to the House of Delegates; (3) selection of Michigan's Foremost Family Physician by vote at the first meeting of the Annual Session of the House of Delegates in September, to facilitate appearance of the selected physician before the House of Delegates.

(Continued on Page 564)

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1. Nettleship, A.: Arch. Dermat. & Syph. 61:669, 1950
2. Brewer, W. C.: Arch Dermat. & Syph. 61:681, 1950

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An Open Letter to MSMS Members

Perhaps you, too, have wondered as I have what these men do whom we elect to the highest positions of responsibility in the MSMS. The other night I had an opportunity to observe and I would like to report to my fellow members of the MSMS what I found.

As you may remember, the councillors whom we elect by way of the House of Delegates meet as a full council twice each year for a two- to three-day session each time. The members of the Executive Committee of the Council meet monthly to carry on the business of the Society, and upon this group of men rests the heaviest burden in the management of our organization and its many projects.

The other evening I had the rare opportunity to sit in as a guest for the last few hours of one of these meetings of the Executive Committee. These men had convened at eleven that morning, and the meeting did not adjourn until a full hour after midnight. I am told that these monthly sessions always last for at least twelve hours. After the meeting, many of the men had from 80 to 120 miles to drive home, with the responsibilities of their professional practices waiting for them early the next morning.

We are all familiar with some meetings which are unduly long because they drag, but this one was handled in a most efficient and business-like manner. There were no long debates; the most important motions were introduced after many hours of careful investigating had been done before the meeting by some one or more of the members. Even at the end of this thirteen-hour committee day I saw no evidence of undue fatigue or resultant hasty action.

As I left that night, I thought to myself: "The MSMS is fortunate indeed to have at its head men of the high caliber and deep devotion of these whom I saw in action tonight. They serve for more than just a 'desire for recognition.' It is no wonder that under this competent leadership we have one of the best state medical societies in the country."

I have a firm conviction that the best way we can show these men our appreciation of their work is enthusiastically to accept the responsibilities offered us in our county and state societies, and to look for new work which needs doing and can only be done if we too spend of our own time and effort. Our membership responsibility goes deeper than the paying of dues.

Signed:

JOHN R. RODGER, M.D.
Bellaire, Michigan

May 10, 1951

HIGHLIGHTS OF EXECUTIVE COMMITTEE OF THE COUNCIL

Meeting of April 25, 1951

One hundred and five (105) items were considered by the Executive Committee of The Council at its April 25 meeting. Chief in importance were:

- Monthly financial reports were presented and approved. Bills payable were inspected and authorized to be paid.
- Resolution was ordered drafted re AMA rule on payment of the voluntary dues of 1950 prior to acceptance of 1951 AMA dues from members; this resolution is to be presented by

Michigan's Delegates to the AMA House of Delegates in Atlantic City, June, 1951.

- Resolution on "Short Lived Income of Doctors" was approved and referred to Michigan's Delegation to present to AMA House of Delegates in June, 1951.
- Purchase of property at 606 Townsend, Lansing. The Legal Counsel reported on the option and matters of encroachment and of possible possession of property by June 15.
- Reports of the President, President-Elect, and Secretary, were presented.
- Question of a member of the Michigan State Board of Registration in Medicine re reciprocity

(Continued on Page 566)

IN HAY FEVER

Effective

even when the pollen count is high

TRIMETON, one of the more potent antihistamines, has consistently provided symptomatic relief in a high proportion of hay fever patients regardless of the pollen count.

In *severe* hay fever, at least 75 per cent of patients experience relief; as many as 90 per cent of patients with *mild* symptoms are benefited. A relatively low incidence of side effects assures uninterrupted therapy for optimum results.

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HIGHLIGHTS OF EXECUTIVE COMMITTEE

(Continued from Page 564)

- (including displaced persons) was discussed. The Executive Committee of The Council favors enforcement of the Michigan Medical Practice Act within the most liberal interpretation in keeping with the policy of good medical care; the intent of the law should not be changed. The medical profession is trying to live up to this Act which aims to maintain a high standard of practice, so it should not be changed to permit persons of questionable training and reputation to dilute the high quality of medical service in Michigan.
- President C. E. Umphrey, M.D., commented on the article in the May *Woman's Home Companion*, written by Alfred Deutsch, formerly with the defunct PM, which suggested that the American Hospital Association and the AMA were at odds on the subject of hospital standardization; this was refuted in a subsequent telegram signed by the secretaries of these two Associations.
 - Mutual problems were discussed with State Health Commissioner A. E. Heustis, M.D., Lansing.
 - Congratulations were extended to J. S. DeTar, M.D., Milan, on his recent election as Speaker of the American Academy of General Practice at its San Francisco Assembly, March 20.
 - A statement was ordered inserted in the Secretary's Letter that complaints had been received re some practitioners allegedly charging exorbitant prices for penicillin; while MSMS realizes that such a practice, if followed, represents activity by only a small fraction of the profession, nevertheless the opprobrium for such overcharges is heaped upon the entire profession by the public which knows the *actual* cost of the drug.
 - A resolution to the AMA House of Delegates requesting that MSMS Special Members (Emeritus, Life, Retired, et cetera) be accorded Associate Membership in the AMA, was authorized.
 - American Medical Education Foundation: a news note in the Secretary's Letter, urging individual doctors to aid the AMEF, was ordered.
 - Local public relations meetings to publicize Blue Cross-Blue Shield and to acquaint representatives of labor, industry, et al, concerning the aims, purposes and problems of Michigan Hospital Service-Michigan Medical Service, were recommended. The medical profession in all parts of the state is urged to give full cooperation to Blue Cross-Blue Shield in conducting such informative meetings with lay groups because in this way the medical phases of Michigan's voluntary group medical care program will become more fully known to personnel directors, labor relations directors, heads of insurance departments, and others representing sizable groups.
 - A scroll was authorized to be presented to the Woman's Auxiliary on the occasion of its 25th Anniversary, in September, 1951. Robert S. Breakey, M.D., Lansing, was chosen as official representative of the Michigan State Medical Society to attend the Woman's Auxiliary luncheon at its Silver Anniversary Convention in Grand Rapids.
 - Michigan Postgraduate Clinical Institute. Dates for this Detroit meeting for the years 1952 to 1957, inclusive, were set.
 - Nominations for the Basic Science Board, to be presented to the Governor, were made.
 - Michigan Heart Association check for \$5,811.57, payment for last quarter of the Michigan Rheumatic Fever Control Program year (1950-51), was accepted with a vote of sincere thanks.
 - Confidential communications. A member's question on this subject was answered by the Legal Counsel. The Executive Committee of The Council recommended that a form, to be signed by the patient, be devised so that doctors of medicine are immune from prosecution for divulging alleged secrets, when requested by the Welfare Department through its questionnaires and forms, similar to release now supplied by insurance companies.
 - Medical Practice Act. Three proposed changes, as recommended by F. L. Troost, M.D., Holt, Chairman of the Committee on Study of Medical Practice Act, were approved.
 - Progress report of Rheumatic Fever Co-ordinator Leon DeVel, M.D., Legal Counsel J. Joseph Herbert, and Public Relations Counsel H. W. Brennehan were presented and approved.
 - Press Relations Conference in Marquette Fri-

(Continued on Page 568)



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Neo-Antergan is characterized by high antihistaminic potency—and a high index of safety. It affords prompt, safe, symptomatic relief to the allergic patient during distressing periods of high pollen levels.

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RAHWAY, NEW JERSEY

JUNE, 1951

Say you saw it in the Journal of the Michigan State Medical Society

567

HIGHLIGHTS OF EXECUTIVE COMMITTEE

(Continued from Page 566)

- day, June 22, on occasion of Upper Peninsula Medical Society meeting, was authorized.
- The drafting of a resolution re hospital standardization program for presentation by Michigan's Delegates to AMA was authorized.
 - Committee reports. The following Committee reports were given consideration: (a) Committee on Increase in Number of Medical Graduates, February 27; (b) Iodized Salt Committee, meeting of March 2; (c) Ethics Committee, meeting of March 16; (d) Medical Procurement Advisory Committee, meeting of March 16; (e) Permanent Conference Committee, meeting of March 21; (f) Infectious Diarrhea Committee, meeting of March 21; (g) Mental Hygiene Committee, meeting of March 22; (h) Emergency Medical Service Committee, meeting of March 28; (i) Industrial Health Committee, meeting of April 4; (j) Child Welfare Committee, meeting of April 11; (k) Quarterly financial report of Cancer Control Committee; (l) Liaison Committee with UAW-CIO, meeting of April 19.
 - Resignation and letter of thanks from Russell F. Staudacher, Assistant Public Relations Counsel, was received, and a communication of appreciation for Mr. Staudacher's services was authorized to be sent to him in care of the AMA Council on Medical Service, where he is now employed.
 - The Ingham County Medical Society's Woman's Auxiliary was complimented by the Executive Committee of The Council for its sponsorship of a recent successful tea in honor of the wives of Michigan's Legislators.
 - The Public Relations Department was given a vote of commendation for its preparation of an excellent brochure in connection with the Invitational Membership Campaign.
 - A scroll was authorized to be presented to Sue Biethan, retiring Librarian of the University of Michigan Medical School. C. E. Umphrey, M.D., President, MSMS, presented the scroll at the May 10 meeting of the Washtenaw County Medical Society.
 - Resolution re the late Senator Arthur H. Vandenberg was authorized to be drafted and sent to his family.

MICHIGAN NURSING CENTER ASSOCIATION

Young women who think of serving their country and their own future as nurses can now get up-to-date information from a new directory, "Schools of Nursing in Michigan," published by the Michigan Nursing Center Association.

Next September 2,000 qualified applicants must enter schools of professional nursing in this state if local and national needs are to be met, according to estimates by the association's Committee on Careers in Nursing. This is a 50 per cent increase over 1950 admissions.

Among the signs of a rising employment market for graduate nurses the committee points out:

Expansion of the armed forces, requiring more nurses in the Medical Corps.

Demands of civil defense program for persons with nursing skills.

More patients treated in hospitals each year; more hospitals being built.

More aged people among the total population.

Growth of public health movement to prevent illness and keep well.

A modern nursing school is no longer confined to the four walls of a hospital, the new pamphlet reveals. While a student still gets her major clinical experience in the hospital with which her school is connected, she may attend a nearby university or junior college for basic science classes. When she is ready for specialized experience she may get it in such institutions as the Children's Hospital of Michigan or the Herman Kiefer Hospital, Detroit; one of the state mental hospitals, for psychiatric nursing; or with the local Visiting Nurse Association.

Besides the three-year hospital courses and the four-year or five-year college courses for high school graduates, approved by the Michigan Board of Registration of Nurses and Trained Attendants, the pamphlet also describes the one-year courses for practical nurses. These courses are supervised by the Office of Vocational Education, Michigan Department of Public Instruction.

Fully 1,000 practical nurses for less highly skilled service can be trained this year in eight centers throughout the state, says the committee. Classes are admitted three times a year. Students may enter with only two years of high school, provided they are at least eighteen and meet general requirements.

Counselors and high school students may secure a copy of "Schools of Nursing in Michigan" on request to the Michigan Nursing Center Association, 470 Hollister Building, Lansing 8, Michigan.

AND ALL THIS UNDER PRIVATE PRACTICE!

The Nation's death rate from tuberculosis dropped about 9 per cent in 1949, to 26.2 per 100,000 population, Dr. W. Palmer Dearing, Acting Surgeon General of the Public Health Service, Federal Security Agency, reported. During the first eleven months of 1950, a further decline of 15 per cent occurred, and the rate for

(Continued on Page 570)



Since the first of June

this new Upjohn plant has
been in full production.

It is the culmination of
five years of planning and
four years of building.

These greatly expanded
Upjohn facilities keep pace
with rapid advances in
medical research.

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Medicine... Produced with care... Designed for health

THE UPJOHN COMPANY, KALAMAZOO, MICHIGAN

AND ALL THIS UNDER PRIVATE PRACTICE

(Continued from Page 568)

this period was 22.6 per 100,000 population, he said, explaining that these figures are provisional, as data for 1949 and 1950 were based on a 10 per cent sample of death certificates obtained from each State and the District of Columbia. Dr. Dearing also pointed out that because the death rate for 1950 was based on figures for eleven months only, no aggregate decrease in the tuberculosis death rate since 1948 can be computed at this time.

The death rate in the United States for all forms of tuberculosis has shown a downward trend for almost half a century, except for a slight rise in 1917 and 1918, during the influenza epidemic of World War I.

Since 1900, the death rate for respiratory tuberculosis has decreased 86 per cent, from 174.5 per 100,000 population to 24.5, while death rates from other forms of the disease have declined 91 per cent, from 19.9 to 1.7 per 100,000 population.

For the year 1949, significant decreases were recorded for men between the ages of twenty-five and sixty-four and women between fifteen and sixty-four. Data for respiratory tuberculosis, which constitutes over 90 per cent of all deaths from the disease, show that the rate for males (32.5) is almost twice as high as the rate for females (16.6). Mortality rates from tuberculosis

continue to be more than three times as high for the nonwhite groups as for the white.

Provisional figures for 1950 show decreases for the age groups between fifteen and seventy-four years. The decreases range from nearly 9 per cent for the sixty-five to seventy-four year group to 23 per cent of the twenty-five to forty-four year group. Each of the four geographic regions of the United States showed a death rate decrease for all forms of tuberculosis in 1950.

INTENSIVE COURSE AT MICHAEL REESE HOSPITAL

The Michael Reese Hospital Postgraduate School is offering a two-week course in "Diseases of the Endocrines—Physiology and Diagnostic Methods." This full-time intensive course will meet from July 9 to July 21, 1951, and consists of a balanced program of basic information and clinical applications. Dr. Rachmiel Levine, Director, Department of Metabolic and Endocrine Research, is co-ordinator of the course.

A full-time intensive course in "Hematologic Diagnosis," under the direction of Dr. Karl Singer, will be presented by the Michael Reese Hospital Postgraduate School from July 23 to August 4, 1951. This two-week course offers a review of the present status of hematology and instruction in actual reading of slides of normal and pathological specimens of peripheral blood and bone marrow.

For further information, address Dr. Samuel Soskin, Dean, 29th St. & Ellis Ave., Chicago 16, Illinois.



R_x

PRESCRIPTION FOR SUMMER

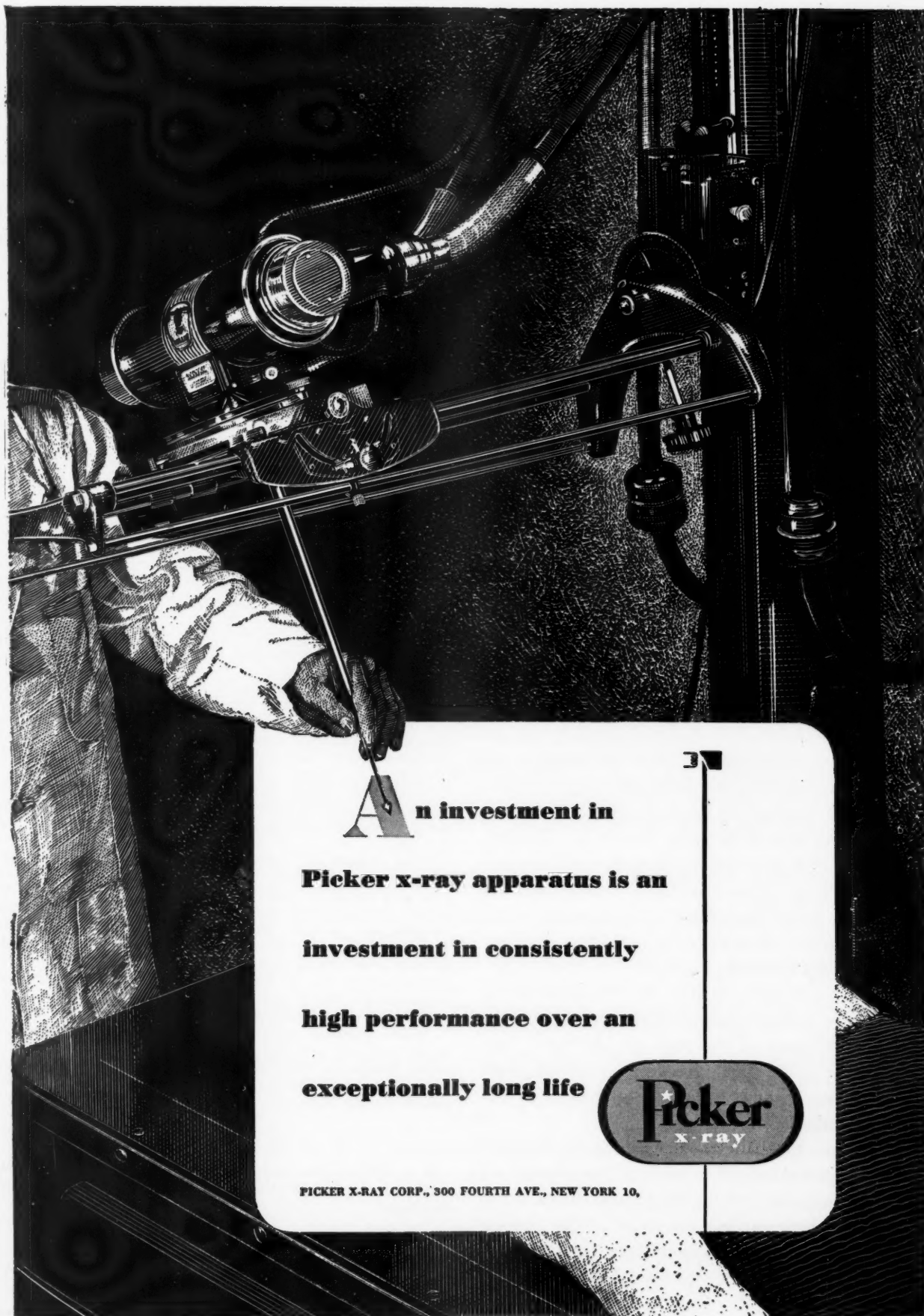
Shake out of stuffy heavies and get into a smart new Summer Kilgore and Hurd suit. Take extra doses of comfort and relaxation by having your entire wardrobe brought up to "summer" by K & H counsellors. We predict you'll find it the best tonic you've ever taken.

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United States Senator Arthur H. Vandenberg of Michigan



WHEREAS, the members of the Michigan State Medical Society are sincerely grieved over the unhappy passing of United States Senator Arthur H. Vandenberg of Michigan, a statesman of international stature; and

WHEREAS, Senator Arthur H. Vandenberg, as United States Delegate to the San Francisco United Nations Organization Conferences in 1945, as United States Delegate to the First and Second General Assemblies of the United Nations in 1946, as United States Representative at the Council of Foreign Ministers and at the Paris Peace Conference in 1946, as advisor to Secretary of State James Byrnes at the Big Four Foreign Ministers' Meeting in Paris in 1946, as the American Delegate to the Rio Pact Conference at Rio de Janeiro, Brazil, in 1947, contributed of his vast knowledge and understanding of the problems of the world to the fostering of enlightened principles which will be the foundations of any world peace to be achieved; and

WHEREAS, amidst the gravest perils that mankind has ever known Senator Arthur H. Vandenberg stood as a fortress of strength and courage, and with clean vision saw and thus aided this country to avoid the pitfalls that caused other nations in other generations to stumble and lose their gains and victories; and

WHEREAS, Senator Arthur H. Vandenberg, as a newspaper editor and publisher, as one of the truly great citizens of the state of Michigan, and as a man of noble spirit, has left his friends with the challenge of new horizons for Peace in this world; THEREFORE BE IT

RESOLVED: that the Michigan State Medical Society, representing the medical profession of this State, expresses the true sorrow of its 5,110 members at the great loss sustained in the passing of Senator Arthur H. Vandenberg and extends sympathy and condolence to his family; and be it further

RESOLVED: that this resolution be spread upon

the pages of THE JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY together with a photograph of Senator Arthur H. Vandenberg, and that his family be supplied with copies of the number in which this testimonial is published.

Signed this 17th day of May, 1951.

C. E. UMPHREY, M.D.
President

R. J. HUBBELL, M.D.
Chairman of the Council

Attest: L. FERNALD FOSTER, M.D.
Secretary

UNCANNILY PROPHECIC

A friend of ours once went to considerable pains to prove that there is "nothing new under the sun." The other day we ran across this uncannily prophetic quotation that seems to bear him out.

It was written in the year 1834 by the French author, Alexis de Tocqueville. We quote it below without further comment:

"Today there are two great peoples who, starting from different points, seem to approach the same destiny; they are the Russians and the Americans. Both of them have grown in obscurity, and, while men were looking the other way, they have suddenly reached the first rank of nations. . . .

"All other peoples seem to have nearly reached the limits of their potentialities. . . . But these two peoples are growing. These alone follow a course whose limit the eye cannot yet detect.

"The American battles the obstacles of nature; the Russian, those of man. The former combats the wilderness and savagery; the latter, civilization with all of its weapons. American conquests are won with the laborer's ploughshare; Russian triumphs with the soldier's sword. To attain its ends, the American relies upon personal interest and allows free scope to the unguided energy and common sense of individuals. The Russian somehow concentrates the power of society in one man. The method of the former is freedom; the latter, servitude.

"Their starting point is different, their ways are diverse, and yet each of them seems called upon by the secret design of Providence to control, some day, the destinies of half the world."—Portland (Ind.) *Graphic and Pennville Booster*

It is held by some surgeons that most ulcerative lesions of the stomach more than 4 centimeters in diameter are malignant.

* * *

Sunlight is the most potent of all carcinogens.

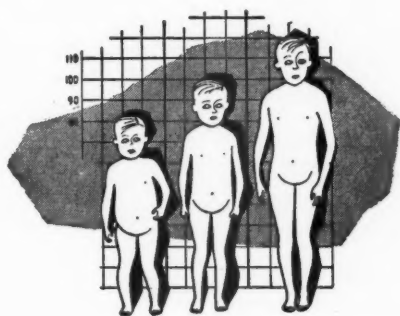
* * *

Locomotive engineers develop skin cancer nine times as frequently as the general population.

AUREOMYCIN

Hydrochloride Crystalline

*Effective against many bacterial and rickettsial infections,
as well as certain protozoal and large viral diseases.*



The Pediatrician has found that aureomycin is promptly and fully effective in his young patients. Infections in any part of the respiratory tract, due to susceptible organisms, are as a rule readily controllable by its means, as are most meningeal infections caused by staphylococci, streptococci, pneumococci, *H. influenzae* and *E. coli*. In the infectious diarrhea of infancy, aureomycin, in conjunction with fluid and electrolyte replacement, has given excellent results. Aureomycin is a drug indispensable to pediatric practice.

Packages

Capsules: Bottles of 25 and 100, 50 mg. each capsule. Bottles of 16 and 100, 250 mg. each capsule.
Ophthalmic: Vials of 25 mg. with dropper; solution prepared by adding 5 cc. of distilled water.

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Cancer Comment

CANCER REGISTERS ARE WORTHWHILE

With an increase in interest in ways and means for the control of cancer, the question of a register for such cases is discussed more and more. As with every other new tool for better service to patients that requires a contribution of a third party to make its use successful, there are some who object to this added service that can be of material help to both the cancer patient and the medical profession.

It has been said that to prevent or control any disease effectively a knowledge of the number, location, and characteristics of cases of the disease is essential. There may be different ways to obtain this knowledge. Whatever method is employed a knowledge of extent of the problem, the incidence, represented by the number of patients involved, is of primary importance. Throughout the history of medicine, improvements in diagnosis, treatment and care of patients have been brought about by a critical study of records of patients. The profession is proud of its record in the control of communicable disease which has been brought about only by reporting of large numbers of such cases and carefully studying in large numbers the results of different treatment and control methods.

Properly organized and operated, a cancer case register can be of distinct service to the medical profession and the community. It can (1) ascertain with reasonable accuracy the extent of the cancer problem, i.e., the number of living cases in the community; (2) insure more effective follow-up on patients who have been under treatment; (3) provide a reservoir of information on various types of cancer suitable for clinical and statistical research.

In Connecticut, where cancer reporting has been in operation since 1935, almost 50,000 individual case histories are now available for research study. Year after year an increasing number of physicians and hospitals in that state have co-operated in the reporting program until now 92 per cent of general hospital beds of the state are represented by the hospitals reporting.

A register provides the only accurate measure of cancer incidence in any community. Prevalence can be obtained by special surveys and will vary

from year to year. Epidemiological studies, of which there is a great lack at this time, can be facilitated by a register as can the study of economic and other social and family problems.

Identification of the patient is essential to prevent duplication of records. As soon as the data are transferred to IBM punch cards, the original records are returned to safekeeping.

To be effective, a register must be supported by all community groups concerned and reporting should be complete. It can degenerate into a "morgue" if its records are not used or are only spasmodically analyzed. Its effectiveness can be increased by routinely checking death certificates of the community concerned, thus keeping only living cases in the active file. Incomplete reporting or coverage of facilities defeats one of the major objectives of the program, that of obtaining information concerning all living cases in the earliest possible stage of development of the disease. It will also invalidate any morbidity statistics that may be derived from analysis of the incomplete data.

In general, the local health department is a logical center for housing the registry although a hospital may serve the purpose, especially if there is but one hospital in the area served. There should be close co-operation between the local register and state health department for purposes of checking death records and other services the health department can render, such as supplying record forms and statistical and other consultation services.

The argument most frequently advanced against reporting cancer cases is that it violates confidential information between physician and patient because the record becomes public property available to anyone. This, of course, is not true as health department records of this nature are safeguarded by law from the public unless they are requisitioned for legal purposes. The same holds true for the physician's case histories. Furthermore, if the physician keeps a written record of his patient's condition, there is no such thing as completely confidential information between patients and physician. For

(Continued on Page 578)



BELIEVE IN YOURSELF!

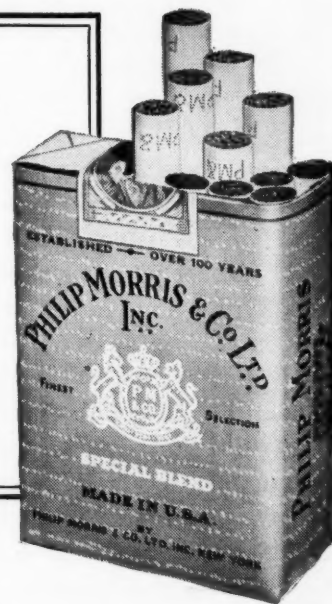
Doctor, you probably have read a great deal of cigarette advertising with all sorts of claims.

So we suggest: make this simple test...

Take a PHILIP MORRIS—and *any* other cigarette. Then,

1. Light up either one. Take a puff — don't inhale — and s-l-o-w-l-y let the smoke come through your nose.

2. Now do exactly the same thing with the other cigarette.



Then, Doctor, BELIEVE IN YOURSELF!

PHILIP MORRIS

Philip Morris & Co. Ltd., Inc.
100 Park Avenue, New York 17, N. Y.

Editorial Comment

MICHIGAN STATE MEDICAL SOCIETY ANNUAL SESSION

GRAND RAPIDS—September 26-27-28, 1951

OBLIGATIONS OF SOCIETY MEMBERSHIP

"And if thine eye offend thee, pluck it out."

Your dues—have you paid them?—Yes, of course; but membership entails further and more important obligations. Dues; Attendance; Committee work; Education of the Profession; Standards of Practice, both technical and ethical; are among the main such obligations, for membership is a privilege which must be paid for with many things more than money. And then there is the duty to maintain the respect and esteem of the Public, to which end our Professional standards are set and kept high.

The great majority of doctors attempt to live up to these standards both from personal pride in their work, and from a group pride in their profession. But any large organization has a few who are "on the fringe," and occasionally well beyond it. These parasites capitalize on the high professional reputation of the group, doing nothing to advance it, and by various shoddy practices are a constant threat to its very maintenance. Such practices are many—inferior service; side-stepping of responsibility; callous pirating of patients; disparaging remarks on the honest efforts of other physicians; and finally inordinate charges. Any and all of these result in loss of respect by the Public for the Profession.

The vicious actions of one such individual do irreparable harm, and unfortunately offset the conscientious efforts of the many. With the Profession of Medicine under fire from many sides, political and otherwise, renewed efforts by all to protect and raise the standards of practice should continue to be the order of the day.

But in addition to this it is high time that we should slough off those who, by their perseverance in practices inimical to the best standards of the group as a whole, are endangering the high and justly earned reputation of the Profession.—ED. SPALDING, Editorial, *Detroit Medical News*, May 7, 1951.

WITHOUT BENEFIT

National Hospital Day will be observed this year without official White House blessing.

According to the first page of a letter to the president of the American Hospital Association from a secretary to the President of the United States, it has grown too difficult to deal with requests for proclamations from so many health organizations.

There is the constant hazard, it is explained, of unintentional discrimination; of favoring one health organization while failing to favor another health organization. Consequently, the President this year will extend recognition to health organizations "only when authorized by the Congress to issue an appropriate proclamation."

The President "does not minimize the invaluable contribution to the health of the nation made through the work carried on by our wonderful hospitals," but, with a policy established, it would be hard to make an exception in this case.

On the second page of this letter, however, the President's secretary explains further: "As an earnest of the President's deep interest in the public health, I would call your attention to the health program which he recommended to the Congress. That program, as you know, has met not only with opposition, but has been misrepresented shamelessly to the public by opponents within the medical profession. There is no need to dwell on this particular subject. I would also call your attention to the fine contribution to the health and general well being made by the Health Resources Advisory Committee of the National Security Resources Board under the chairmanship of Dr. Howard A. Rusk."

So it may be said that, literally for one reason and another, National Hospital Day in 1951 will be observed without official White House blessing.—Editorial, *Hospitals*, The Journal of the American Hospital Association, page 63, May, 1951.

A Preferred Nasal Decongestant and Vasoconstrictor

Otorhinolaryngologists frequently express preference for Neo-Synephrine hydrochloride to alleviate turgescence and nasal congestion in colds, sinusitis and various forms of rhinitis.

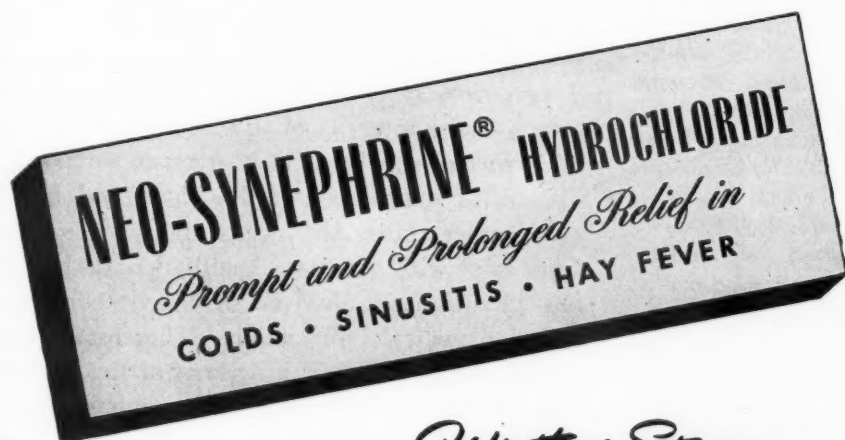
"When considerable nasal obstruction exists, relief may be obtained by the instillation of some shrinking agent into the nose . . . as for example Neo-Synephrine hydrochloride ($\frac{1}{4}\%$)"¹

A "desirable preparation of this type has been perfected in Neo-Synephrine hydrochloride. It may be used for local application in the nose in $\frac{1}{4}$ to 1% solution."²

Neo-Synephrine's "desired effect occurs within from two to fifteen minutes..."³

"Its action is sustained for two hours or more."³

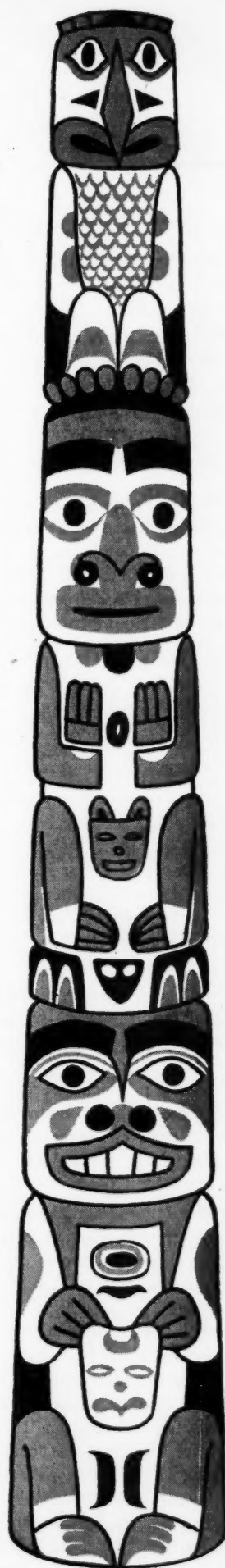
Neo-Synephrine hydrochloride is notable for freedom from sting and for effectiveness on repeated application. There are few complaints of after effects such as burning and nasal congestion . . . and little tendency to develop local sensitivity.¹



Winthrop-Stearns INC.
NEW YORK 18, N. Y. WINDSOR, ONT.

1. Tuft, L.: *Clinical Allergy*. Philadelphia, W. B. Saunders Co., 1947, pp. 335-336.
2. Hansel, F. K.: *Allergy of the Nose and Paranasal Sinuses*. St. Louis, C. V. Mosby Co., 1936, p. 769.
3. Kelley, S. F.: *Choice of Sympathomimetic Amines*. Cornell Conferences on Therapy, II, 1947, p. 156.

Neo-Synephrine, trademark reg. U. S. & Canada, brand of phenylephrine



Political Medicine

Washington, D. C.
April 3, 1951

Editor, *Journal of the American Medical Association*
535 North Dearborn Street,
Chicago, Illinois

My attention has been called to the President's Page in March 31 issue *Journal American Medical Association*. It quotes sentence from what you mistakenly call a "current" pamphlet, describing it as "Mr. Ewing's directive." Any reputable scientific periodical verifies statements before publication. Elementary check would have revealed that pamphlet was written and issued in 1945, some two years before I became Federal Security Administrator. Checking would also have revealed that this pamphlet is not being currently distributed by Federal Security Agency, and has never had remotest authority as directive. Since you profess to be a scientific magazine interested in truth, I suggest you retract the statement as publicly as it was made in the first place.

OSCAR R. EWING,
Federal Security Administrator
Federal Security Agency

Chicago, Illinois
April 11, 1951

The Honorable Oscar R. Ewing
Federal Security Administrator
Federal Security Agency
Washington, D. C.

We have your telegram of April 3, protesting a reference in the *Journal of the American Medical Association*, to a pamphlet issued by your office titled: "Common Human Needs, an Interpretation for the Staff in Public Assistance Agencies," from which I quoted the following passage: "Social Security and public assistance programs are a basic essential for attainment of the socialized state envisaged in a democratic ideology, a way of life which so far has been realized only in slight measure."

We note your denial of responsibility for the pamphlet on the grounds that it was published in 1945 before your tenure as administrator of that office. This denial, as you request, will be duly reported in the *Journal*. You are correct in assuming that as a reputable scientific periodical it is the habit of this *Journal* to verify statements before publication. The facts concerning my reference are these.

The pamphlet in question was reprinted for distribution by your office in 1949, when the public record indicates you were in charge of the Federal Security Agency, its publications and its directives to employees. Five copies were received in the mail here last week, which indicates certain currency still. These all carry the imprint, "Government Printing Office, 1949." The fact that the report was first printed in 1945 would not

seem to alter the further fact that you apparently have thought well enough of it to have it reprinted in 1949.

We would suggest that if you wish at this time to disavow the principles expressed in the pamphlet, you will wish to do so in a formal statement to Congress, for as recently as February 26 this year, it was protested on the floor of Congress as a grave misuse of taxpayers' money to disseminate wholly unAmerican philosophies.

In case it was without your knowledge that your office was reprinting and distributing such unAmerican directives during your tenure, you may wish to issue a public statement disclaiming responsibility for the material. If so, we shall certainly be glad to be helpful in giving such a statement further distribution through the *Journal*, for the medical profession will be sincerely interested in any such action.

ELMER L. HENDERSON, M.D., *President*
American Medical Association
Chicago, Illinois

CANCER COMMENT

(Continued from Page 574)

example, the physician's office personnel of assistant, nurse or receptionist and, if a hospitalized case, internes, residents, attending nurses, supervising nurse, record librarian, record clerks or insurance companies demanding information regarding care furnished for accidents or illness—all have access to records and constitute possible sources of "leaks." The fact that seldom if ever does such information reach outside ears attests to the integrity of these types of personnel.

Furthermore, when cancer is made a reportable disease, as it has been in Michigan and twenty-seven other states, the responsibility of reported cases rests with the state health department and the physician is absolved from violating confidential medical information. Therefore, danger in this regard is largely a figment of the imagination of the physician who overemphasizes such danger as an excuse for his unwillingness to cooperate in disease reporting programs.

Carcinoma of the ovary is frequently bilateral and it is a wise precaution on the part of the surgeon to remove both ovaries and the uterus at the first operation.

* * *

Earliest symptoms of carcinoma of the uterine corpus are usually the onset of postmenopausal bleeding or an unusual or active leukorrhea.

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The Elderly Patient

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THE PERSONAL and social problems of elderly folks have taken on great importance due to the substantial increase in numbers of our older population group. Distinguished citizens of Michigan with visions of significant changes in our American panorama have emphasized the importance of the extending human life span. Warthin has contributed one of the best studies under the title of *Old Age, the Major Involution*. The University has sponsored for the last three years an institute for the study of problems of the older years.

The medical problems of folks in the later years of life are rapidly taking on increased importance. The control of the common infections, nutritional disorders, glandular discrepancies, and a number of other diseases has protected infants, youths, and adults, now permitting them, if not destroyed by accidents, to attain in greater numbers the later years of the human life span.

A half century ago in 1900 one out of every two citizens was under twenty years of age. There was a high birth rate and a great number of immigrants. At the present time immigration has come to a standstill and there has been a decline in the birth rate. In 1900 some 3,000,000 individuals, or one out of every twenty-five, were sixty-five years of age or more. Today the figure is approaching 12,000,000, or one in every thirteen. While the population has doubled in one and a half centuries, the citizens of sixty-five years or more have almost quadrupled.

This transformation of our people has brought into sharp relief the medical problems of the later years. It is appropriate that these be clearly tabulated, their characteristics inspected, and means for more efficient control brought about.

The character of our national life has changed likewise. At the turn of the century we were a rural, an agricultural people. Today we are industrialized. More people live in cities, the character of family life and mode of living has greatly changed. In this atomic age medicine indeed is facing new problems, or shall we say, old problems with greater emphasis on those deteriorations and afflictions of the later years. There is pressing need for doctors to realize the peculiarities of disease in old bodies and minds. Heretofore this area, so rich in promise for medical science, has been largely neglected. Pediatrics as a specialty rendered important services since its recognition as a specialized field during the latter part of the nineteenth century. The youth movement paid rich dividends in the control of disease and the enrichment of living the early years of life. Is it not high time that the problems of the harvest years, the years of arrival, now be examined by the new techniques of the scientific method?

Since geriatrics has to do with the diseases and disturbances of men and women in the later years of life, the question naturally comes to mind, "When does old age begin?" This is a fascinating and perplexing query. One finds vivid, alert, interesting, young, active folks in the eighties, and on the other hand, there are individuals even in the twenties and thirties who have all the characteristics of old age. Perhaps there is a difference in the measurement of age of the human body. Watch time or chronological time calculated by the movements of the sun, planets, and stars is a convenient yardstick with which to estimate the years of human life. However, it is more important

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to know the condition of the tissues of the body; the efficiency and health of the heart muscle, the balance of the body function, action of the nervous system, play of the emotions, the bloom and freshness of the personality—these forces which govern every man, woman, and child are the real determining influences which extend or shorten life and, of more importance, give it substance, satisfaction, and social significance.

Why do human tissues deteriorate prematurely? Evidence is available that premature degeneration of the vascular channels of the body, resulting in apoplectic stroke, coronary occlusion, hypertension with hardening of the arteries, is caused by some disturbance in the intermediary fat metabolism of the body. For example, population groups in certain areas in China, India, and Africa, who subsist on low fat diets, have little or no hardening of the arteries. Also, it can be proven experimentally by feeding animals low fat diets, for controlled experiments demonstrate an absence of vascular deterioration due to fatty substances. This field represents one of the most important challenges for research. Statistics indicate that about one million lives are taken each year as the result of vascular damage. Many of these lives would be saved if more light were shed on the intermediary metabolism of food stuffs, notably the fats.

Disorders of the Later Years

The elderly individual is more susceptible to infectious diseases, such as the ordinary cold, pneumonia, and the everyday afflictions that may occur to individuals during the mature years. Surgical emergencies may arise in elderly individuals. It has been found with careful preoperative preparation, the selection of an appropriate anesthetic, and gentleness on the part of the surgeon, that the mortality rate for surgical operations is only slightly greater for older people than occurs for the younger age groups. Of course, the increase in the number of elderly individuals has brought about a marked increase in the number of cases of cancer since tumor growths occur with greater frequency in persons over sixty years of age. Improved methods leading to earlier diagnosis and more adequate eradication of the cancerous growths has accomplished complete cure in a great many cases.

The tempo of physiological processes slows with advancing years. Nature seems to conserve strength and resources. Healing of illness and recovery following infections occur more gradually. The ac-

tions of drugs oftentimes is exactly the opposite from the response that is generally needed in young patients. Carrel endeavored to establish a measure of the age of tissues by the time interval required for healing. There is a ruggedness of older tissues and an ability to stand the insults of deleterious influences which appear to be the result of accumulated adaptability. On the other hand, particularly with the sub-clinical forms of malnutrition resulting from long-continued improper diet, body reserves are diminished. There is a lessened tolerance for changes in temperature.

Two factors must be kept in mind in our evaluation of the elderly patient. First, the older state of the body tissue brought about by the accumulated stresses and strains over a period of years which cause a diminution in the comeback of the tissues. Second, the attitude of family, friends, and business associates. The environment in which the elderly patient lives is frequently most depressing and is not conducive to restoration of body function and return to normal activity. The incentives to recovery are too often absent. Where there is no hope for future happiness, there is often no stimulus for the patient to help himself. Accumulated frustrations depress the individual and aggravate an unhealthy situation.

Mental disorders are common in elderly folks. Whereas the serious mental disorders known as schizophrenia, major forms of epilepsy, and other psychoses occur most frequently in the earlier years of life, mental changes due to hardening of the arteries in the brain are common in elderly persons. Not rarely minor aberrations appear which may be due to nutritional deficiency or low grade infectious processes. Modern methods of therapy have improved the mental status of many individuals in the later years.

Treatment in Old Age

By careful attention to the nutrition, elimination, rest, and recreational program of folks in the later years of life, the wear and tear processes may be reduced to a minimum. In each instance an appraisal of physical, emotional, and mental assets is essential. The existence of hidden foci of infection—poor teeth, the bent posture inviting further decrepitude, the unhealthy and unclean skin—must not go unobserved. The sulfa drugs and antibiotics produce the same remarkable response in the elderly body as in earlier years. However, sedatives are tolerated poorly and, indeed, confusion

and excitement may occur rather than quietude. The opiates depress vital functions and may produce renal shutdown. The most satisfactory sedative is probably a small amount of codein. The barbiturates are frequently poorly tolerated.

Much has been written pro and con about the use of tobacco and alcohol. The old "codger" who has enjoyed his pipe for many years should not be denied its comfort unless its use has been proven to be the stimulating factor in cardiac or other pain.

Alcohol, when tolerated, may be a boon for the older patient. As a tonic for the digestion and a sedative for the nervous system, with some energy production in addition, whisky in therapeutic amounts has been generally helpful. However, too often one man's meat is another man's poison. With the best intentions a physician may prescribe spirits frumenti for a patient and later be informed by other members of the family that the patient has been a confirmed alcoholic and that it was only with difficulty that members of the family were able to control his craving for the drug. Experience is the best teacher. Before whisky or other alcoholic beverage is prescribed, the attending physician should ascertain the tolerance of his patient for the prescription.

Psychotherapy is an essential requirement when treating the medical disorders of the later years. The despondencies and fears which beset the elderly patient must be met by the resourcefulness of the physician and nurse. Illness at any age is a calamity. In the elderly patient it may be the beginning of the last long mile. Regardless of the physical outcome it is within the province of the physician to sustain the spirit and hope of his patient; furthermore, the members of the family need be encouraged to maintain a cheerful attitude and interest in the recovery of the patient.

Old Age Pensions

Old age pensions and other forms of social security are a necessary social support to large numbers of the population; nevertheless, a satisfactory state of mind brought about by creative interests, social contacts, and pleasant engagements is essential to add significance to the later years of an individual's life. It has been found that retirement at a stipulated age is a difficult and oftentimes depressing experience for individuals who are in possession of abundant energy, both physical and intellectual. Retirement, based on chronological rather than physiological ageing, is bound to work hardships.

This problem is receiving increasing attention on the part of large organizations at the present time.

Recently the Standard Oil Company of New Jersey has set up a formal and scientific program of pre-retirement counseling on a group basis. This is being tried at one of their New Jersey affiliate branches. It is an endeavor to aid older workers to make provision for financial security and health maintenance in the post-retirement years.

Briefly, the employees in the group are interviewed on their fifty-ninth birthday, five years preceding retirement. Following a group interview, counseling is offered concerning physical problems and the various types of activity available upon retirement. The company acknowledges its responsibility to prevent its employees from experiencing a purposeless old age despite financial security. This is an effort to avoid a condition, a state of mind, described by one of the company's retired board chairmen. Six months after his retirement he reported to his former colleagues that they were the most miserable days of his entire life. After counseling by the company, the man was made a partner in an investment banking concern and now has taken on new life.

This is a program based on translating job satisfactions experienced by employees nearing retirement age into post-retirement careers. Among these job satisfactions are feeling of activity, a sense of importance, belonging, usefulness, achievement, and the sensation of being needed, companionship, and the desires for creative work and physical change. Not all job satisfactions can be carried over into retirement, nor is it necessary in order to guarantee an interesting old age. Some workers desire further activity or change of occupation. Only a few find satisfaction in just loafing.

Governor Warren recently called a meeting to study the problems of elderly folks in California. A number of important suggestions were offered and many observations outlined. To begin with there are entirely too many persons in state mental institutions who are there only because there is no place else for them. This contributes heavily to crowding in these institutions and keeps mental patients from receiving proper treatment. Local communities were advised to set up their own infirmaries and institutions to take care of the chronically ill elderly patients. The conference agreed that, as a rule, what elderly people needed were cottage-type units rather than hospitals.

Is Longer Life Possible?

Philosophers and scientists, astrologers and alchemists have studied the problem of extending the years of human life. Essentially the problem of long life is one of organic and tissue stamina. The question, then, appears to be whether conditions of tissue wear and tear are remedial. Tissue repair processes slow down with age. The problem, therefore, for the scientist today is to study the intrinsic nature of those processes. Pearl has demonstrated that longevity may be passed on with a mathematical precision like the transmission of physical characteristics. Other experiments have been conducted with reference to the effect of temperature and diet on the length of life of lower animals. McCay of Cornell has demonstrated that white mice fed on a restrictive diet lived longer than those given all they can eat. Thin folks live longer than those who are overweight.

Science is on the march for new ways and means for extending the life span to its biological limit. This poses a challenge to society to utilize the later years of the population in the direction of social advancement.

The human life can be studied from different viewpoints. A man may be looked upon as a purely physical mechanism, or he may be regarded as a converter of energy. Man may be thought of as an intellectual force, as an emotional dynamo, and finally as a spiritual wanderer.

As a transformer of energy, man begins to age as soon as the male and female cells unite. The growth of an individual proceeds through various stages and according to the rhythms of natural law. Maturation of the individual begins at conception. After some time, wear and tear processes set in. If the living cycle for the human body should follow the same maturation curve of evolution, development, and senescence as that of lower animals, it would seem that premature deterioration is an all too common condition today. As an example, a dog is full grown physically at two and has an average life expectancy of twelve years. At one and a half years of age a cat is full grown and has an expectancy of ten years. At four years a horse is fully grown and has a life expectancy of twenty-five years. According to this, if man is physically mature at twenty-five, then he should have an average normal life expectancy of one hundred and fifty years. If this is an observation of value and represents the potentialities of natural rhythmal existence, then man still has not nearly

approached the optimum or the possible life span, since today he averages only seventy years of age.

Calendar Years Are Inaccurate

The ageing of the human body does not follow a uniform progression in all individuals. It is a widely accepted fact that a body may exhibit many of the major characteristics of the later years well before the age of forty has been reached. In fact, there is a common clinical condition, progeria, which is characterized by the very active ageing of the tissue in the youthful years. Ageing of the intellect does not of necessity parallel the ageing process of the body tissue. In fact, the real measure of the vitality and stability of the individual must be an estimate of the integrity and resources of the personality.

Certain basic requirements should be kept in mind for a vigorous, well-balanced, and enjoyable old age. There are ten brief points which might be listed.

First, the diet of older folks should be altered according to their needs. The elderly body conserves energy. As older folks are less active, there should be a corresponding reduction in their total caloric intake. However, clinical observations reveal a protein deficiency in many elderly folks. A diet which averages 150 or 220 depending on occupation, protein optimum of 100 grams and fats from 60 to 80 grams may be taken as a desirable example. This nutritional program, stressing liver, iron and calcium, vitamins, and adequate fluid intake, will improve strength without adding to body weight.

Elimination of waste products through bowels, kidneys, and lungs must not be permitted to become sluggish.

Adequate rest for the body, the nervous system, and the psyche of individuals in the later years is essential to ward off the enervating effects of fatigue.

Too often old folks invite attack by becoming too active; nevertheless, purposeful activity resorted to with reasonable moderation relieves the worried mind and gives it a positive motive. Improper posture and forward bending as age comes on interferes with physiological function.

Old folks need emotional balance and self-discipline just as much as younger individuals need it. Too often vascular accidents result from the consuming fires of anger, rage, and fear.

The preservation of a sense of humor. How im-

portant that is. The somber temperament wears out more rapidly than the merry heart. After all, older folks who have escaped the accidents and storms of the early years have cause for a happy heart.

The cultivation of contacts with younger individuals. Such friendly bonds pay rich dividends. Age has much to learn from youth, and youth should profit from the mature experiences of their elders.

Intellectual growth is a major sign of maturity. A new approach to an old problem is an extension of one's intellectual frontier. "Age has its opportunities no less than youth itself, and as the evening twilight fades away the sky is filled with stars invisible by day."

Continuous education. This thought is in keeping with recommendations of authorities who have investigated possibilities of study on the part of older individuals. In this way they continue to grow and participate in the thoughts of the world's great minds. Furthermore, they are better able to take on new responsibilities and enter new realms of interest.

Never retire. Never retire to a life of complete inactivity. It is far more desirable to wear out than to rust out. By the development of new pursuits when one is asked to withdraw from a faculty, a bank, an industry, or other occupation, one can make a wise investment in his new found leisure.

George Washington retired three times in his life. After each time he became neurotic and introspective. He complained of a number of inconsequential functional disturbances. In other words, the father of our country became neurotic when he retired from active service. Washington was born in February, 1732. After he had retired from command of the Virginia militia in 1758 because of ill health he wrote, at the age of twenty-six, "I have now too much reason to apprehend my approaching decay." However, in June, 1775, at the age of forty-three, he returned to command the Continental Army and, of course, distinguished himself. In 1783, when he was fifty-one, he wrote, "The scene is at length closed. I will move gently down the stream of life until I sleep with my fathers."

As a rule, when an individual retires, too often there is no opportunity or outlet for continued activity which is necessary to a satisfying existence; immediately one begins to live in the past. With the loss of sustaining habits the elderly person becomes depressed and his attention is directed to the

organs of the body in search for signs of debility. There is a prompt diminution in vitality, and the joy of living gives way to a wearisome discussion of one's misfortunes. Successful existence at any age requires an all-absorbing motive.

The problem of retirement is a challenge to industry, labor and the professions today because many men are at their most productive capacity just at the period when the age limit is reached. Many have ten, fifteen, or twenty years longer of useful service. To ask them to retire is detrimental certainly to employers and employees alike. Some other method needs to be selected to find out when a man has ceased to be useful in one particular position. This may be determined by his employer, his physician, and himself. Appropriate recommendations should then be decided for the utilization of his newly-won leisure. Charles W. Elliott, in his late eighties, was so engaged with new pursuits that he had a ten-year program worked out, and indeed he lived until the ninety-third landmark of his life.

The crowning achievement of life, it would seem, is the ability to grow old gently and gracefully—beloved of all, with happy memories of a useful existence. To attain the ultimate and final success in growing old gracefully for each of his patients, the practicing physician today needs to have a clear understanding of the major problems of the later years.

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U. S. MATERNAL DEATH RATE ESTABLISHES NEW LOW RECORD

For the first time in history, the maternal death rate for a large nation has been pushed slightly below the apparently irreducible minimum of one per 1,000 live births, according to the *Journal of the American Medical Association* (Nov. 25, 1950).

The new record, compares with 1.2 maternal deaths per 1,000 live births in 1948 and with 6.2 in 1933. On that basis, the *Journal* concluded that "childbirth has been made quite safe." In 1949 there were thirty states with rates less than 1.0, two at exactly that level and only seventeen above.

"The fact that the chances of an expectant mother surviving the diseases of pregnancy, childbirth and the puerperium [confinement period] are now better than 999 out of 1,000 is truly a story of human and social progress," said the *Journal*.

The reduction in the death rate from 1933 was attributed to several factors: (1) an increasing percentage of births in hospitals, although improvements in the medical care provided in home births have been pronounced; (2) development of prenatal care; (3) health education; (4) the administration of sulfonamides, antibiotics, whole blood or blood derivatives, and (5) improvement in training in obstetrics.

Unlike the trend in many nations, the number of births attended by midwives in the United States is being rapidly reduced, it was pointed out.

Clinical Application of Adrenergic Blockade in Sympathetic Predominance

By Fredrick F. Yonkman, M.D.
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SYMPATHETIC PREDOMINANCE indicates an overactivity of one portion of the autonomic nervous system over certain end organs controlled or innervated by this sympathetic division. This condition may indicate that in certain instances the normal counterbalancing parasympathetic nervous system, through some insufficiency of its own, may have become overshadowed by the sympathetic portion of the autonomic nervous system. For example, tachycardia may be due to either a loss of parasympathetic control through the vagus or an augmented sympathetic control through the cardio-accelerator sympathetic nerves, if one is to consider only neural control of the heart rate. Conversely, hyperactivity of the vagus may cause hypermotility and increased tone of the intestinal tract because of a greater number or a greater strength of vagal impulses, or such hyperactivity may be due to a diminution of normal counterbalancing "quieting impulses" traversing the splanchnic nerve of the sympathetic nervous system. Physicians have long had available parasympathetic blocking agents in the form of atropine, scopolamine and other belladonna ingredients, as well as certain synthetic agents capable of producing a so-called cholinergic blockade. On the other hand, the suppression of sympathetic predominance had, until recent years, been more difficult of attainment. Pharmacologists have carefully studied numerous possibilities during the last several decades and only recently have there been successful attempts in the clinical application of such adrenergic blockade in sympathetic predominance, and it is this phase of the problem toward which we wish to direct our major attention here.

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The outflow of nerve impulses originating in the central axis to the periphery is illustrated in Figure 1. Impulses originating in either the cerebrum, hypothalamus, medulla or spinal autonomic

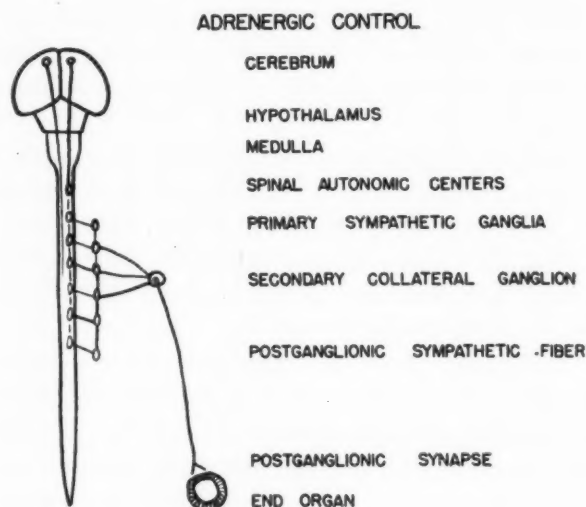


Fig. 1.

centers may traverse the primary and then the secondary sympathetic ganglia along the sympathetic nerves to the end organ, which in this case, let us presume, represents a blood vessel, either superficially located in the skin or in the deeper structure of the uterine wall. Excitation of impulses along either pathway will result in an increased tone of the blood vessel, in other words, the condition of sympathetic predominance. Such vasospasm may reflect itself in any one of the following conditions:

- Peripheral vascular disease
- Arterio-obliterations
- Diabetic gangrene
- Thromboangiitis obliterans
- Raynaud's syndrome
- Livedo reticularis
- Acrocyanosis
- Causalgias
- Trench and immersion foot
- Thrombophlebitis
- Acute ischemia (polio)
- Lymphedema
- Post-traumatic edema
- Frostbite
- Scleroderma
- Endarteritis
- Herpes zoster
- Post-herpetic neuralgias
- Popliteal aneurysm and embolism
- Dysmenorrhea
- Hypertension
- Cerebral "accidents"
- Thrombotic and vasospastic

Space limitations will permit discussion of only a few of these interesting conditions.

In order to release or prevent the vasospasm associated with sympathetic predominance, it is obvious from Figure 1 that there are several points of attack. Barbiturates may conceivably be ef-

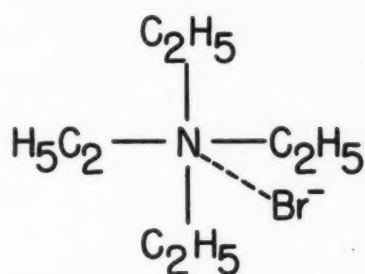


Fig. 2. Tetraethylammonium bromide.

ficacious because of their sedative action on either the cerebrum, hypothalamus or medulla, and probably also certain portions of the spinal cord, but chiefly on the cerebrum, thus dampening the outflow of excess impulses from the central axis. A direct action of any drug upon the blood vessel wall which might produce relaxation of the smooth muscle could also counteract in part the predominant activity of the sympathetic nervous system. Such drugs, however, have not proved too successful in the conditions cited above.

Therefore attention was directed by various investigators toward the possibility of producing a ganglionic blockade in the sympathetic ganglia. The most successful efforts recently produced Etamon (Parke-Davis) which is a long-known compound, tetraethylammonium chloride (Fig. 2).

It produces a very effective blockade of sympathetic impulses at the synaptic point of transfer from the preganglionic to the postganglionic fibers, thus throwing a block into the sympathetic system, not at the blood vessel or end organ but, as indicated, higher up in the sympathetic pathways, namely, at the sympathetic ganglia. The effects of such adrenergic blockade are illustrated in Figure 3 taken from the work of Berry and his associates.³

One notes an immediate drop in systolic and diastolic blood pressure, both of which returned almost to normal levels within fifteen to thirty minutes. Concomitantly the skin temperature of both the right and left legs was increased, both features giving evidence of loss of vasoconstrictor tone. Etamon has proved to be effective in all of the vasospastic conditions cited above, but unfortunately sustained use of the drug is somewhat limited because it can be given effectively only by the in-

travenous route. The high doses required do not permit intramuscular, subcutaneous or oral administration because of the hypertonic and irritating effects of the drug on the subcutaneous tis-

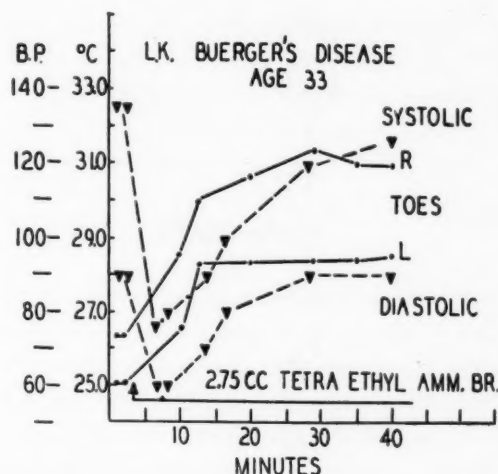


Fig. 3. The effect on blood pressure and peripheral skin temperature of blocking the autonomic ganglia with 275 mg. of tetraethylammonium bromide in a patient with thromboangiitis obliterans. The left leg had advanced occlusive changes. Superficial phlebitis was present in the right leg. From Berry et al: Surgery, 20:525 (Oct.) 1946.

travenous route. Other side reactions of importance in some patients include dryness of the mouth and dysphagia, atony of the gastrointestinal tract and bladder, all of which are associated with the generalized ganglionic blocking activity of the drug. In other words, the blocking effect of the drug on the sympathetic ganglia carries over to the parasympathetic ganglia, thus resulting in atony or flaccidity of the gastrointestinal tract and the urinary bladder.

Peripheral circulatory collapse may appear after the use of Etamon, but usually this can be attributed to overdosage and too early arising from the prone position after intravenous administration. If the dose is nicely titrated for each patient, orthostatic hypotension becomes less important as an undesirable feature. If the ganglionic blocking activity of Etamon could be targeted to include only the sympathetic ganglia, the drug would prove to be much more valuable in the conditions cited above. Your chemical and biologic investigators are constantly in pursuit of such more selective ganglionic blocking activity in order that many of the undesirable reactions may be successfully overcome or obviated.

A potent adrenergic blocking agent which acts peripherally and not on the sympathetic ganglia is Dibenamine (Fig. 4). It is slow in onset of action but prolonged. Unfortunately it is limited entirely

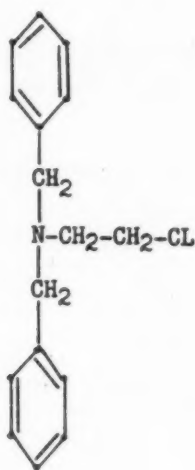


Fig. 4. Dibenamine. N,N-dibenzyl-β-chloroethylamine.

to intravenous administration and is necrotizing if inadvertently some of the drug be permitted to seep extravascularly. It cannot be given feasibly by the oral route because of its marked irritating action on the gastric mucosa. In this respect it is more limited orally than Etamon. Some successful attempts have resulted from placing the Dibenamine in various forms of colloidal suspension and in enteric-coated tablets.²³ Such results are so limited, however, that efforts have been made to find chemical analogues⁸ of Dibenamine which might be less irritating to the gastric mucosa and still permit them to be absorbed from the gastrointestinal tract. These studies are now in progress and the reports should soon be forthcoming.

Certain alkaloids of ergot have been known for their sympathetic blocking capacity as well as their smooth muscle stimulating properties. Ergotoxine, for example, in the experimental animal can very nicely block the effects either of adrenaline administered intravenously or of sympathin (norepinephrine?) either produced endogenously by neurofaradization or exogenously administered. In the clinical subject, however, ergotoxine is much too toxic from a practical point of view. It was therefore interesting to learn of successful attempts of the Sandoz chemists¹⁶ to develop highly effective and less toxic derivatives of the alkaloids contained in the ergotoxine group of ergot alkaloids: Ergocristine, Ergokryptine and Ergocornine (Table I).

TABLE I. COMPOSITION OF THE NATURAL ALKALOIDS OF ERGOT

Cleavage Products of Alkaline and Acid Hydrolysis		
I. Ergotamine-group 1. Ergotamine Ergotaminine 2. Ergosine Ergosinine	{ Lysergic acid NH ₃ Pyruvic acid d-Proline	+l-Phenylalanine +l-Leucine
II. Ergotoxine-group 3. Ergocristine Ergocristinine 4. Ergokryptine Ergokryptinine 5. Ergocornine Ergocorninine	{ Lysergic acid NH ₃ Dimethyl-pyruvic acid d-Proline	+l-Phenylalanine +l-Leucine +l-Valine
III. Ergobasine (Ergometrine) Ergobasine (Ergometrine)	Lysergic acid	+d-2-Aminopropanol

Bull. Acad. Suisse Sc. Med., 2: 1, 1946-1947.

The effects of one of these, in terms of producing adrenergic blockade, may be observed as follows: a control injection of adrenaline into the femoral artery produces a definite blanching of the foot. However, some thirty minutes after the injection of the vasodilator or adrenergic blocking dihydroergocornine (DHO 180), a control injection of adrenaline intravenously into the femoral artery still produces no vasoconstriction, indicating a strong blockade effected by the ergot alkaloid.¹⁰ What the ultimate clinical status of this group of drugs may be is difficult to state but such strong pharmacologic activity in terms of adrenergic blockade would indicate promise for these new derivatives of a well-known drug. They bear watching in the treatment of peripheral vascular disease.

Another drug capable of producing adrenergic blockade is Priscoline (2-benzyl-imidazole hydrochloride). A glance at the formula (Fig. 5)

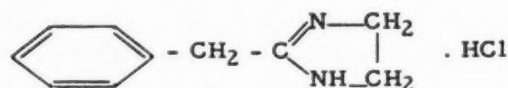


Fig. 5. Priscoline. 2-benzyl-imidazole hydrochloride.

indicates that it is a chemical relative of histamine, the vasodilating properties of which are well known.^{9,12} Apparently these chemical changes afford a prolonged period of activity. It has long been known on the Continent and in South America but only rather recently has it become available in this country. Evidence of its vasodilating properties can be observed by a flushing or reddening of the skin after its intravenous, intramuscular or oral administration. The effects of the drug on skin temperature have been studied by numerous

SYMPATHETIC PREDOMINANCE—YONKMAN

investigators, and Figure 6 represents the work of Wakim, Peters and Horton²² of the Mayo Clinic, demonstrating that although all areas of the body may be affected in terms of temperature changes,

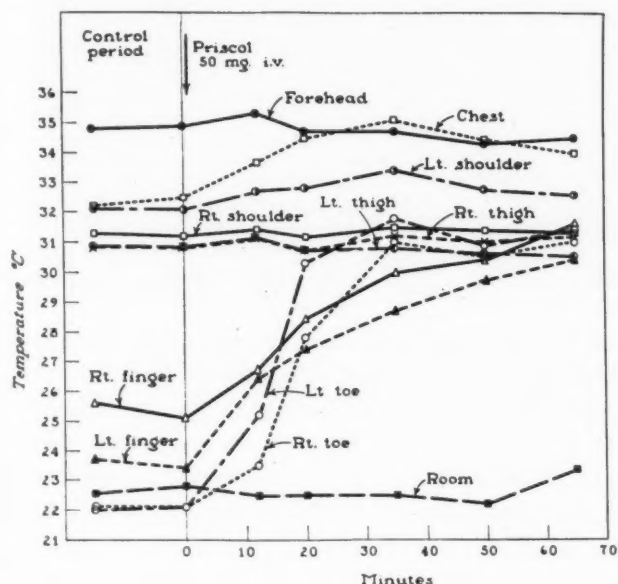


Fig. 6. Representative set of temperature curves from one of the subjects before and for about one hour after intravenous administration of 50 mg. of Priscol. The increases in temperature of toes and fingers were relatively greater than those of other areas on the body after the drug was given. From Wakim, K. G., et al: *J. Lab. & Clin. Med.*, 35:53 (Jan.) 1950.

those most favorably affected are the areas of the fingers and toes, a feature of practical import when considering the application of adrenergic blockade in the clinical conditions cited above.

Effects definitely not desirable from the therapeutic point of view and varying in type and degree are exhibited by approximately 25 to 30 per cent of the patients taking Priscoline (Table II).^{7,15} There may be a flushing of the skin and an appearance of goose flesh as well as a feeling of chilliness in some patients. They may require withdrawal of the drug but in most instances these are not disturbing enough to necessitate discontinuance of therapy. More disturbing, although less frequent, are the symptoms of nausea, postural dizziness, apprehension, and occasionally vomiting, audible peristalsis and sweating. At times there may be complaints of headache or a stuffy nose, the latter probably indicating that a complete adrenergic blockade had been effected in the nasal area. The latter symptoms appear, however, only as a rule after higher doses than normally are employed.

TABLE II. SYMPTOMS OR SIDE EFFECTS OF TAKING PRISCOLINE (2-BENZYL-4, 5 IMIDAZOLINE HCL)

Single Dose, 25-75 mg.
Always:
Flushing of skin, goose flesh
Occasionally:
Nausea, apprehension, palpitation.
Doses of 175-200 mg. within 3 hours
Always:
Flushing, goose flesh, chilly feeling, postural hypotension.
Usually:
Nausea, postural dizziness, apprehension.
Occasionally:
Vomiting, audible peristalsis, palpitation, sweating, dizziness, headaches, stuffy nose.
Chronic Treatment—50 mg. q. 4 h—75 mg. q. 2 h
Always:
Flushing, goose flesh
Occasionally:
Palpitation, nausea, apprehension.
Grimson, K. S., et al: <i>Ann. Surg.</i> , 127:970, 1948.

Most patients become accustomed to the milder side reactions and some even to the nausea and gastrointestinal distress. The latter can sometimes be obviated by either a reduction in dosage or by the addition of cholinergic blocking, antispasmodic agents such as atropine, belladonna, and some of the newer synthetic agents such as Banthine, Pavatrine, Syntropan and Trasentine (Fig. 7).²⁴

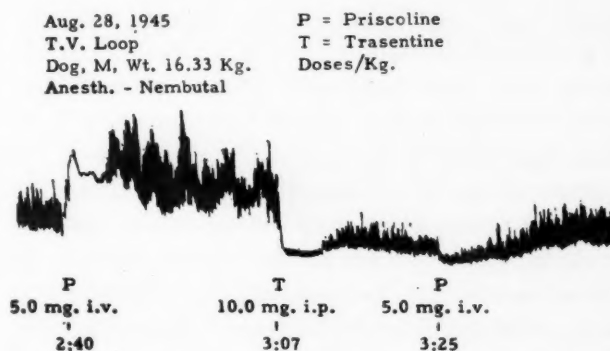


Fig. 7.

More recently other side reactions have become more important and these appear in the form of gastric hypersecretion to the point of exacerbation of the symptoms of peptic ulcer, exacerbation of coronary insufficiency and "hyperinsulinism" in diabetes mellitus. The first of these usually can be controlled by either reduction of dosage or by the addition of appropriate antacid therapy.⁶ Such hypersecretion may be associated with the imidazoline or histaminic nature of Priscoline. Exacerbation of coronary insufficiency may be due to either one of two features: (1) a redistribution of available blood into dilated areas away from an already embarrassed myocardium, or (2) a direct cardiotoxic effect of Priscoline as evidenced by palpitation and increased cardiac output. There have been reports in approximately twenty or thirty

SYMPATHETIC PREDOMINANCE—YONKMAN

TABLE III. 24 PATIENTS TREATED FOR SEVERE DYSMENORRHEA WITH ORAL "PRISCOLINE"

(Dosage Interval 3-24 Hours)				
50 Mg. Dosage (15 Patients)			25 Mg. Dosage (9 Patients)	
Relief of Pain	No. of Menstrual Days	Per Cent	No. of Menstrual Days	Per Cent
Complete	18	29	8	36.35
Good	18	29	8	36.35
Partial	20	32.2	5	22.7
None	6	9.7	1	4.5
Total	62	99.9	22	99.9

Griffith, M. I., and Little, J. M.; South. M. J., 42: 1082 (Dec.) 1949.

diabetic patients of "hyperinsulinism" to a degree where the insulin requirements had to be materially reduced. The reason for this lowering of blood sugar is unknown, but this problem is being investigated at the present time. We call your attention to these important undesirable features associated with the administration of Priscoline in occasional patients with the hope of obviating embarrassing and disturbing consequences.

There are three especially important clinical indications in which adrenergic blockade may be successfully applied. These indications are relatively new and may bear special emphasis because of their nature and distribution as well as importance in the public mind. Here again we wish to stress the fact that any effective adrenergic blocking agent, whether it be ganglionic or peripheral in nature, may produce some degree of favorable action. Neurospastic dysmenorrhea has been successfully treated⁵ by the concomitant use of nicotinic acid and Priscoline, both vasodilators; the former operating by direct action on the smooth muscle of the blood vessel and the latter by a dual action, namely, a direct histaminic action on the smooth muscle of the blood vessel as well as a peripheral adrenergic blocking activity.

Although Priscoline, administered orally, was effective (Table III) better results were obtained when such oral administration was accompanied by the intravenous administration of nicotinic acid (Table IV). Griffith and Little believe that the uterine vessels, particularly the arterioles, contain sensory dendrons which, when impinged upon or compressed under the influence of sympathetic predominance, give rise to painful stimuli. Their thesis seems to be supported by the results obtained with the use of vasodilators and an adrenergic blocking agent which obviously would effect a decompression of the "excited" sensory painful dendrons.

TABLE IV. 25 PATIENTS TREATED FOR SEVERE DYSMENORRHEA WITH INTRAVENOUS "PRISCOLINE" AND INTRAVENOUS NICOTINIC ACID

"Priscoline" (13 Patients)			Nicotinic Acid (12 Patients)	
Relief of Pain	No. of Menstrual Days	Per Cent	No. of Menstrual Days	Per Cent
Complete	15	46.8	10	55.5
Good	7	21.8	1	5.55
Partial	9*	28.1	6†	33.3
None	1	3.1	1‡	5.55
Total	32	99.8	18	99.9

*Three of these given a follow-up of intravenous nicotinic acid with complete relief in all three.

†Five of these given follow-up of 50 milligrams of intravenous "priscoline" with complete relief in two and good relief in three.

‡Given follow-up of 50 milligrams of intravenous "priscoline" with no relief. (See case report No. 3.)
Griffith, M. I., and Little, J. M.; South. M. J., 42: 1082 (Dec.) 1949.

The pain associated, in some instances, with the acute phase of poliomyelitis, according to Smith and his associates,¹⁹ may well be due to involvement of sympathetic ganglia, as has been histologically demonstrated, as well as to involvement of the lateral horns of the spinal cord. The well-known damaging effects of the virus of poliomyelitis on the cell bodies of the anterior horns apparently carries over to the sympathetic neurons and especially to the sympathetic ganglia in certain regions (Fig. 8).

The "irritating" effects of the virus in the sympathetic chain could manifest itself in painful vasospasm in certain blood vessels, either superficially or deeply located (Fig. 9).¹¹

If the hot pack treatment of Sister Kenny, when successful, exercised its benefits presumably through vasodilation, Smith et al reasoned that prolonged treatment with a relatively safe, easily administered drug might produce similar benefit. Their report,¹⁸ covering some 600 cases treated at the Kingston Avenue Hospital in Brooklyn, indicates that Priscoline seemed to have been of definite benefit, but to a varying degree, in approximately 75 per cent of the cases. Similar studies²⁰ have been made at the Herman Kiefer Hospital of Detroit by Dr. Franklin Top and his associate, Dr. O'Donnell. They likewise found Priscoline to be effective to a varying degree in approximately 65 per cent of eighty-eight patients thus studied. Their results, however, were not as striking as those of Smith and his associates. A completely negative report as to the value of Priscoline in this condition is that of Geisler and his associates⁴ who concluded that, according to the technique which they employed, they had observed no benefit from this type of vasodilating treatment. On the other hand, more recently, Polley of the St. Louis

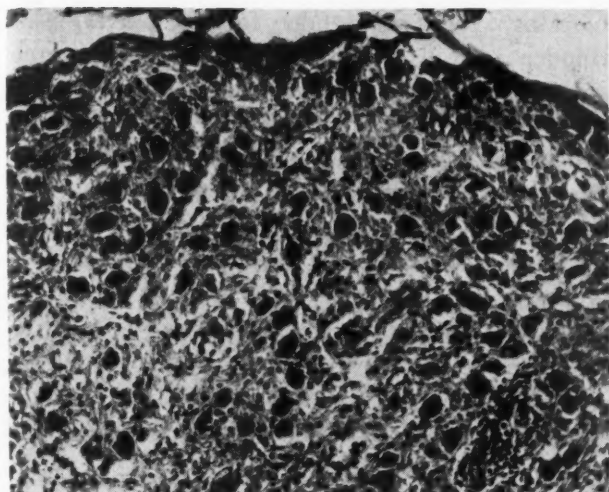


Fig. 8. Section of sympathetic ganglion in cases of bulbar poliomyelitis showing round cell infiltration of stroma. From Smith, E., et al: The role of the sympathetic nervous system in acute poliomyelitis. *J. Pediatrics*, 34:7 (Jan.) 1949.

University Hospital (St. Mary's Group of Hospitals) reported¹³ as follows:

"Experience in the use of Priscoline led to the following conclusions:

"1. Fever was not considered a contraindication for the use of Priscoline. However, a greater tendency toward nausea was noted among the febrile patients.

"2. In general no toxic effects were noted. The appearance of a 'flush' and the occurrence of nausea was expected and did appear. Patients behaving in this manner were continued on the drug but at a reduced dosage. Eliciting a flush did not seem to increase the efficiency of the therapeutic response.

"3. It was the opinion of those who had observed the operation of the same division during previous years that the results achieved with Priscoline were equal to the results obtained when the hot pack methods had been closely followed. It was a pleasant experience to find an efficient substitute for the time-consuming and cumbersome hot pack equipment."

To reconcile the variance of a single unfavorable report with the successful reports from several other clinics is difficult. Only time will tell whether the sustained vasodilatation produced by Priscoline, Etamon and other agents will prove to be of real significance, but the majority of available reports warrants encouragement, if not optimism.

Acute cerebral "accidents," whether due to hemorrhage or thrombosis, may well have an element of vasospasm associated with them. This undoubtedly is of a secondary reflex nature associated with hemorrhage or thrombosis but the end

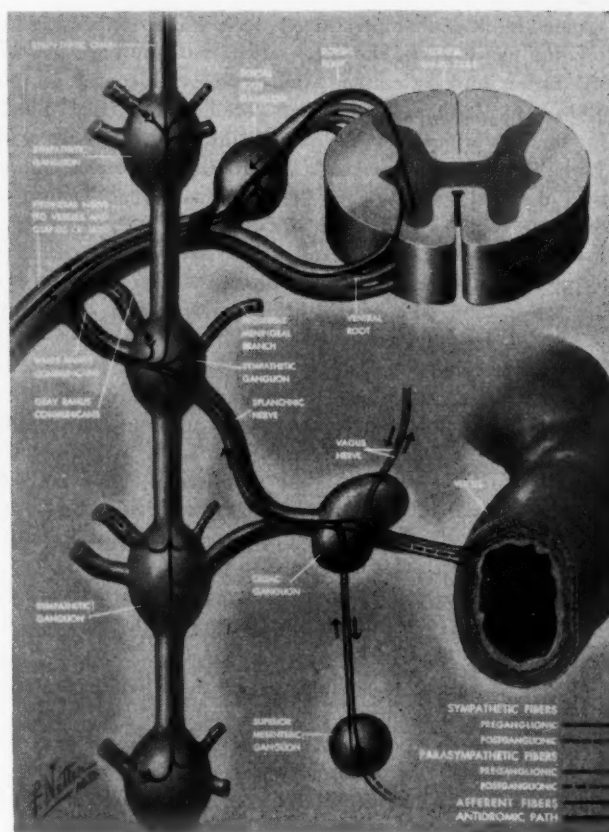


Fig. 9.

result would be similar to that associated with primary vasospasm unaccompanied by either hemorrhage or thrombosis. In any event there is definite proof that sympathetic predominance to the point of vasospasm frequently if not invariably prevails in cerebral vascular accidents. Not only are sympathetomies or stellate ganglionic blockade with novocaine effective,¹⁷ but Etamon and Priscoline have produced similar beneficial results by way of relieving the vasospasm of cerebral vessels. Prandoni and Alpert^{1,14} have employed 3 to 6 mg. of Priscoline, intracarotidly, on the affected side, with beneficial results following almost immediately. Such results have been achieved by Bennett² after intravenous administration of Priscoline. Bennett states:

"About 4:30 a.m. on January 10 I was called to see a man in his early seventies who had just suffered a cerebral vascular accident. This man in the past three years had had a coronary thrombosis as well as two previous cerebral episodes of thrombosis. At about 4:00 a.m. he was found lying on the floor by his daughters, apparently having gotten up to go to the bathroom. When seen by me, he was lying in bed unable to talk, could barely move his fingers and toes on the right, and had a very pronounced facial paralysis. His blood pressure was 180 and his pulse was 72. I gave him some nitroglycerine

under the tongue and started back home, expecting to see him again in the morning. However, the night before my father had called my attention to an article* in the JAMA of January 7, entitled 'Stellate Ganglion Block in the Treatment of Acute Cerebral Thrombosis and Embolism.' I did not read the article the night before so I decided to return to the office and read it immediately. When I had finished doing this, I thought that I could accomplish the same result almost immediately by giving him some Priscoline intravenously. I called up his son-in-law, who is also a physician, and at about 5:15 a.m. we injected 1.5 c.c. (37.5 mg.) intravenously, and within two minutes his facial paralysis disappeared, he was able to say a few words and also move the arm and leg that had been previously almost completely paralyzed. We then made arrangements for him to go to the hospital and at 7:45 that morning he received his first novocaine stellate ganglion block and has had four others since. He is now able to walk around, has an excellent grip in his previously impaired hand and, except for some remaining difficulty in his speech, seems to have made an excellent recovery. He was also given Dicumerol by mouth.

"I would like to know if this procedure has been used before and also whether you can think of any contraindications to its use in such cases, even though it may be impossible to immediately differentiate between cerebral hemorrhage and cerebral thrombosis. Following the injection his pulse rate increased quite quickly from 72 to 96 and then returned gradually to the 70's.

"If this procedure should prove to be without contraindication, I think it might result in a great deal of prevention of prolonged disability following cerebral vascular accidents. Its particular usefulness would seem to me to be the fact that it can be administered by any general practitioner almost as soon as he sees the patient and thus avoid the usual necessary delay that would occur if one were to wait until stellate ganglion block therapy could be instituted."

The value of Priscoline orally in this type of patient has also been reported by VandenBerg,²¹ who states:

"I have had an increasing number of cerebrovascular disorders which have apparently benefited from oral and parenteral Priscoline. This has been especially gratifying in hypertensive encephalopathies and as prophylaxis during prodromal paresthesias which so frequently precede actual cerebral thrombosis."

It would seem then that sympathetic predominance is an important factor in the etiology of certain clinical dyscrasias. The fact that it can be so readily nullified or alleviated by the clinical application of certain antisympathetic or adrenergic

blocking agents offers hope for the general practitioner as well as for the specialist; the former sees many patients thus afflicted in his daily practice, and he now has available several agents which can assist him in counteracting the effects of sympathetic predominance. It is the physician's responsibility to individualize his therapy to suit the particular patient at hand in order that the proper medicament may be administered as he applies his art. As yet the ideal agent, in terms of efficiency, safety and freedom from side effects, has not been found but one may rest assured that the current intensive investigations may offer still greater promise.

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(Continued on Page 624)

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Clinical Use of the Newer Antibiotic Agents in Surgery

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THIS DISCUSSION is intended to review our experience with the newer antibiotic agents and to consider the problems of their correct choice and use in the treatment of various surgical infections.

Although a large variety of antibiotic agents with antimicrobial effects for an expanding range of pathogenic microorganisms have been introduced, only a few have been of sufficiently low toxicity to permit their clinical investigation. Those which have been investigated clinically during the past four years include bacitracin, polymyxin, chloromycetin, aureomycin, terramycin, and neomycin. The antimicrobial spectrum, dosage, methods of administration, untoward reactions, and clinical indications of each of these agents will be discussed first.

Bacitracin

Bacitracin's antibacterial spectrum is extensive and very similar to that of penicillin (Table I). Its action is similar in certain respects to that of penicillin, differing in that its bactericidal activity appears to be directly proportional to its concentration.

Administration and Dosage.—Bacitracin is administered parenterally by intramuscular injection in doses of 10,000 units every six hours for forty-eight to seventy-two hours. If no signs of renal irritation develop within this period, the dose may be increased to 15,000, 20,000, or 30,000 units every six hours. Doses in excess of 30,000 units are not recommended unless the infecting organism is relatively resistant to bacitracin, no signs of nephrotoxicity develop with lesser preliminary dosages, and no other effective agent is available. It should be administered in a solution of 2 per

TABLE I. MICROORGANISMS SENSITIVE TO BACITRACIN

Hemolytic streptococcus	Bacillus pseudodiphtheriae
Nonhemolytic streptococcus	Clostridium tetani
Microaerophilic streptococcus	Clostridium welchii
Anaerobic streptococcus	Clostridium histolyticus
Staphylococcus albus	Clostridium septicum
Anaerobic staphylococcus	Clostridium oedematiens
Pneumococcus	Clostridium sporogenes
Meningococcus	Clostridium sordelli
Gonococcus	Actinomyces bovis
Bacillus diphtheriae	Treponema pallidum
Staphylococcus aureus	Endamoeba histolytica

cent novocaine in physiological saline to minimize pain at the site and time of injection.

Bacitracin may be used very effectively as a topical agent for the treatment of superficial infections either as a dilute solution in physiological saline or an ointment containing 50 to 500 units of bacitracin per cubic centimeter or gram.

Before the start of bacitracin therapy, a urinalysis, phenolsulfonphthalein renal function test, and determinations of the blood urea nitrogen or nonprotein nitrogen should be made. If evidence of renal damage exists, bacitracin therapy should not be used or be used with great caution. During the first four days of therapy, daily urinalyses should be done and phenolsulfonphthalein renal function tests should be performed every other day. If albuminuria or granular casts develop, further administration of bacitracin may be continued with great caution. However, if the albuminuria increases to 3 or 4 plus, or if hematuria develops, further administration of the agent should be discontinued, particularly if nausea, vomiting, or signs of nitrogen retention occur.

Advantages.—The chief advantages of bacitracin as a chemotherapeutic agent include slight or little tendency of bacteria to develop resistance to its action, either *in vitro* or *in vivo*; its effectiveness in the presence of blood, pus, wound exudates, or necrotic tissue; its lessened tendency to produce hypersensitivity reactions in patients treated either systemically or locally; its effectiveness against many penicillin-resistant, streptomycin-resistant, or other antibiotic-resistant infections; and its superiority to penicillin in the treatment of some microaerophilic streptococcal infections.

Disadvantages and Untoward Reactions.—However, certain disadvantages of bacitracin have tended to limit its selection for systemic use and its dosage. Signs of nephrotoxicity may occur on the third to fifth day after the start of parenteral treatment, as evidence by urinary albuminuria, granular casts, renal epithelial cells, and microscopic

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TABLE II. BACTERIA SENSITIVE TO POLYMYXIN B

H. influenzae	A. aerogenes
H. pertussis	Ps. pyocyaneus (some strains)
B. typhosus	Vibrio cholerae
B. paratyphosus	B. dysenteriae
E. coli	B. tularensis
N. catarrhalis	B. pestis
Ps. aeruginosa	B. fecalis alcaligenes

hematuria. In some instances, elevation of the blood urea nitrogen or nonprotein nitrogen levels may occur. The degree of albuminuria may vary from a trace to 4 plus. The lesion produced is a lower nephron nephrosis. Pulaski reported an incidence of nephrotoxic phenomena in about half of a series of twenty patients treated with bacitracin, and we have noted similar signs in 44 per cent of our cases studied. Discontinuation of bacitracin is usually followed by disappearance of the albuminuria within three to seven days.

Clinical Indications.—In general, bacitracin has been used effectively in a wide variety of infections produced by hemolytic and nonhemolytic streptococci, anaerobic and microaerophilic streptococci, staphylococci, pneumococci, gonococci, actinomycetes, spirochetes of the mouth, and the clostridia of gas gangrene. At the present time, however, its parenteral use is usually reserved for patients without renal disease and with infections produced by strains of the above bacteria which are resistant to other available antibiotic agents such as penicillin, aureomycin, and chloromycetin. Further refinement with a reduction of the nephrotoxic factors of bacitracin are necessary before the drug will be acceptable for general clinical use and before it can be distributed widely for this purpose.

Polymyxin

Polymyxin B's antibacterial activity is highly selective for Gram-negative bacteria and it is bactericidal and not bacteriostatic. It is unique as a chemotherapeutic agent in its remarkable specificity for Gram-negative bacteria only, which distinguishes it from all other antibiotics thus far reported (Table II).

One distinct advantage of polymyxin B is the infrequency with which resistance is developed by strains of bacteria subjected to its action.

Administration and Dosage.—Polymyxin is administered parenterally by intramuscular injection every four to eight hours in doses of 2.2 mg. per kg. of body weight to produce antibacterial levels in the circulating blood and lymph. When given

orally, it is not absorbed in sufficient amounts to be effective, although this route of administration produces a marked reduction in the number of intestinal bacteria of the Gram-negative variety. It may also be used topically when applied as a solution or ointment to areas infected by susceptible bacteria.

Untoward Effects.—Over one-half of our cases which were given full therapeutic dosage have shown some evidence of toxicity such as vertigo, headaches, paresthesia, albuminuria, ataxia, or microscopic mild hematuria. When used topically, no evidence of toxicity was noted. Pain and local irritation at the site of injection have been of sufficient degree to warrant preparation of solutions for intramuscular injection in 1 or 2 per cent novocaine.

Drug fever developing in three to five days after the onset of therapy occurred in one of our patients, but no effect was observed on the red or white blood cell counts in any of those observed.

Clinical Indications.—Infections produced by susceptible Gram-negative bacteria have been very successfully treated with polymyxin B, including infections of the urinary tract, wounds, meninges, pleura, and blood stream. Its general use at the present time, however, is to be discouraged because of its inherent toxicity. It may be used with caution in the therapy of infections produced by Gram-negative bacteria sensitive to its action, but resistant to other available and less toxic antibiotics. It is hoped that some means of decreasing its toxicity will be developed.

Aureomycin

Aureomycin is a particularly effective antibiotic agent, whose antibacterial activity is extensive for both Gram-negative and Gram-positive bacteria as well as some virus and rickettsial forms (Table III). Of the Gram-negative bacteria, *E. coli*, *A. aerogenes*, *E. typhosus*, some strains of *B. proteus*, and *B. alcaligenes fecalis* are generally sensitive to the action of aureomycin; the majority of strains of *Proteus vulgaris* and *Pseudomonas aeruginosa* are relatively resistant. Of the Gram-positive bacteria, most strains of the various aerobic and anaerobic pyogenic cocci are definitely susceptible to its action, but to a lesser degree than to penicillin. For example, our *in vitro* tests in sixty-three strains of hemolytic staphylococcus aureus showed the antibacterial activity of aureomy-

NEWER ANTIBIOTIC AGENTS IN SURGERY—ALTEMEIER

TABLE III. MICROORGANISMS SENSITIVE TO AUREOMYCIN

Meningococcus	H. influenzae
Gonococcus	B. typhosus
Pneumococcus	B. paratyphosus
Staphylococcus aureus	B. tularensis
Staphylococcus albus	N. catarrhalis
Streptococcus faecalis	B. dysenteriae
Streptococcus mitis	B. faecalis alcaligenes
E. coli	Borellia novyi
A. aerogenes	Treponema pallidum
Br. melitensis	Rickettsia rickettsi
Bacteroides group	Undetermined number of viruses

cin to be from 2 to 330 times less than that of penicillin, depending upon the susceptibility of the different strains. A significant characteristic of aureomycin is its ability to attack microbes such as viruses which are located within the cell membrane of human cells. It is most effective against actively reproducing bacteria and relatively ineffective for adult or resting cultures.

Administration and Dosage.—Aureomycin is administered by preference orally in doses of 20 to 75 mg. per kg, for twenty-four hours. For the average adult, this means a dose of approximately 500 mg. every four hours or 750 mg. every six hours. When administered orally, aureomycin is readily absorbed from the gastroenteric tract into the general circulation, and effective antibacterial concentrations are easily produced in the blood and tissues, urine, cerebrospinal fluid, pleural fluid, bile, and peritoneal fluid.

Aureomycin may also be injected intravenously, there being a 5:1 ratio in dosage between the oral and parenteral methods of administration. The usual adult dose for intravenous injection is therefore 100 mg. every four hours. Of the two available forms, we prefer aureomycin glycinate to the preparation made in leucine solution, since the former was more stable and much less productive of local thrombophlebitis than the latter. Although the oral route is usually preferable, the intravenous route is desirable when a high antibacterial level is wanted at once or when absorption from the gastroenteric tract is not possible for one of various reasons.

Aureomycin may also be applied topically as a solution or ointment in the treatment of superficial lesions produced by susceptible microorganisms.

Untoward Effects.—The toxicity of this agent is low, but the development of nausea, vomiting, or diarrhea occurred in 24 per cent of our patients, making them uncomfortable. Pruritis, stomatitis, allergic skin reactions, and Herxheimer type of

TABLE IV. MICROORGANISMS SENSITIVE TO CHLOROMYCETIN

E. coli	B. dysenteriae
A. aerogenes	Rickettsia prowazeki
B. typhosus	Rickettsia rickettsi
B. paratyphosus	Rickettsia orientalis
Proteus vulgaris	Rickettsia mooseri
H. pertussis	Psittacosis virus
Br. suis	Lymphogranuloma virus
Br. melitensis	Atypical pneumonia virus
Salmonella enteritidis	Staphylococcus aureus
B. tularensis	Staphylococcus albus
N. catarrhalis	Streptococcus hemolyticus
Pseudomonas aeruginosa	Streptococcus viridans
(some strains)	B. anthracis
Borellia recurrentis	Pneumococcus

febrile reaction have been occasionally noted. We have noted no evidence of anemia, leukopenia, renal irritation, or liver impairment caused by aureomycin.

Clinical Indications.—The full clinical potentialities of aureomycin are still undetermined. It is indicated in the treatment of many Gram-positive as well as Gram-negative bacterial infections, and it is of particular value in the management of penicillin, streptomycin, and sulfonamide resistant infections.

Included in the surgical infections treated successfully with aureomycin at the Cincinnati General Hospital are cases of septicemia, wound infection, cellulitis, and osteomyelitis produced by the hemolytic staphylococcus aureus or the hemolytic streptococcus; cases of recurrent burrowing sinuses or abscesses caused by the anaerobic streptococcus; patients with Gram-negative bacillary infections such as septicemia, cholangitis, urinary tract lesions, wound infections, and peritonitis.

In addition, either an excellent or a good result was obtained with aureomycin in 66.6 per cent of our cases of mixed Gram-positive and Gram-negative infections such as wound infections, peritonitis, empyema, urinary tract infections, crepitant cellulitis of the abdominal wall, and intraabdominal abscesses and pelvic inflammatory disease. It is of definite value in the treatment of gas gangrene and other infections caused by Clostridium welchii. It has also been used effectively in patients with lymphopathia venereum. This antimicrobial agent is undoubtedly a valuable addition to the field of chemotherapy.

Chloromycetin

Chloromycetin is likewise an exceedingly valuable antibiotic agent with a marked antibacterial activity against a large number and variety of microorganisms (Table IV). In addition to the

Gram-negative bacilli sensitive to the action of aureomycin, 54 per cent of the strains of *B. Proteus* and 40 per cent of those of *Ps. aeruginosa* are susceptible to its action.

It also shows considerable activity against the various Gram-positive bacteria, but is from 33 to 166 times less antibacterial for Gram-positive cocci than penicillin. It has no significant effect against protozoa and fungi. While its antiviral and antirickettsial activity has been very significant in non-surgical lesions, it has been relatively unexplored in surgical conditions.

Administration and Dosage.—Chloromycetin is given orally by preference and may also be administered intravenously, rectally, or topically.

After its oral administration, it is readily absorbed and adequate antibacterial levels are produced in the circulating blood, lymph, tissues, urine, bile, pleural and peritoneal fluids, wound exudates, and cord blood of the newborn. The oral dose recommended is 50 to 100 mg. per kg. of body weight for twenty-four hours, divided into four or six doses and given at equal intervals. Frequently, an initial larger or primary dose may be given. In the average adult patient, the oral dose used by us has been 500 mg. every four hours or 750 mg. every six hours. A satisfactory parenteral form of chloromycetin has been developed containing 25 per cent of the antibiotic in 50 per cent acetyl dimethylamine. The dose recommended for intravenous injection is 20 to 30 mg. per kg. of body weight per day.

Untoward Effects.—There has been little evidence of toxicity manifest in the 215 patients treated with chloromycetin, and no serious toxic reaction developed in any patient. Nausea and vomiting occurred in six cases and diarrhea in one. A maculopapular cutaneous rash appeared in three patients on the fourth to seventh day of therapy. A stomatitis with burning of the tongue and mucous membranes was noted in two. We have noted no evidence of suppression of the bone marrow with hemopoietic changes, although these have been described in experimental animals.

Clinical Indications.—Like aureomycin, the clinical potentialities of chloromycetin for surgical infections have not been fully explored, but there is no doubt that chloromycetin is a valuable addition to the field of chemotherapy. It is very effective in the treatment of Gram-negative bacterial infec-

TABLE V. ACTIVITY IN VITRO OF CRYSTALLINE TERRAMYCIN HYDROCHLORIDE—SPECIES SENSITIVE TO IT

<i>Aerobacter aerogenes</i>	<i>B. tularensis</i>
<i>K. pneumoniae</i>	<i>Staphylococcus albus</i>
<i>E. coli</i>	<i>Staphylococcus aureus</i>
<i>S. typhosa</i>	<i>Hemolytic streptococcus</i>
<i>S. paratyphi</i>	<i>Pneumococcus</i>
<i>S. schottmuelleri</i>	<i>Gonococcus</i>
<i>S. pullorum</i>	<i>H. influenzae</i>
<i>Shigella paradysenteriae</i>	<i>Cl. welchii</i>
<i>Bacillus subtilis</i> (FDA 219)	<i>Brucella bronchiseptica</i>

tions and in mixed infections of wounds and the urinary tract in which the causative agents are *E. coli*, *A. aerogenes*, *E. typhosus*, or *B. proteus*, but less so in those caused by *Pseudomonas aerogenosa*. Therapeutic response of chronic urinary tract infections without obstructive phenomena has been prompt, the urine usually becoming clear in twenty-four to thirty-six hours.

Evidence is accumulating that chloromycetin is of use in the treatment of acute secondary peritonitis, wound infections, putrid empyema, pelvic inflammatory disease, cholangitis, pyelophlebitis, gonorrheal infections, and anaerobic streptococcal lesions. In mixed infections which have been particularly resistant to therapy in the past because of the synergism of infecting bacteria and progressive spread, our clinical experience indicates that the use of chloromycetin in conjunction with the indicated surgical procedure is of definite benefit in the majority of instances.

Chloromycetin is also effective in the treatment of acute pyogenic infections produced by the Gram-positive cocci such as furuncles, carbuncles, wound infections, et cetera, and has been particularly valuable in those produced by penicillin resistant strains.

It is of definite value in the treatment of gas gangrene and other infections caused by *Cl. welchii*.

Except in lymphopathia venereum, the antiviral and antirickettsial effect of chloromycetin for surgical lesions has not been adequately explored. The antibiotic is of little effect in the treatment of tuberculosis.

Terramycin

Another new and very promising antibiotic to be recently introduced is terramycin. This agent has a wide antimicrobial activity *in vitro* and *in vivo* against a large variety of microorganisms (Table V), including various Gram-negative bacteria, Gram-positive pyogenic cocci, and a variety of viruses and rickettsia. In high concentrations

NEWER ANTIBIOTIC AGENTS IN SURGERY—ALTEMEIER

TABLE VI. ANTIMICROBIAL SPECTRUM

Pneumococcus	E. typhosus
Streptococcus viridans	B. coli
Streptococcus hemolyticus	Pseudomonas aeruginosa
Staphylococcus aureus	B. abortus
Staphylococcus albus	K. pneumoniae
Streptococcus faecalis	Proteus vulgaris
B. anthracis	Salmonella schottmuelleri
A. aerogenes	M. tuberculosis

it appears to inhibit the infection of a chick embryo with influenza A virus.

Administration and Dosage.—Terramycin is administered by the oral route only and the recommended dosage is 500 to 750 mg. every six hours for the average adult. In severe infections, a primary or initial dose of 1.0 gram may be given. In small children, a dose of 100 to 150 mg. per kg. of body weight per day may be used.

Terramycin is readily absorbed and effective levels are quickly produced in the blood, lymph tissues, peritoneal and pleural exudates, bile wound exudates, cord blood of the newborn, and urine.

Untoward Effects.—Terramycin is well tolerated by the majority of patients, although signs of gastrointestinal irritation may be manifest as nausea or vomiting. In one of our cases headache and parasthesia developed during therapy with this antibiotic. In another patient, an allergic skin reaction occurred.

Clinical Indications.—Early clinical studies indicate that terramycin is a valuable antibiotic passing significant therapeutic effects for a variety of infections produced by the various Gram-negative bacteria other than *B. proteus* and *Pseudomonas aeruginosa*, hemolytic staphylococcus aureus, pneumococci, streptococci, gonococci, and *Clostridium welchii*. It has also been used successfully in a small number of cases of lymphopathia venereum, granuloma inguinale, intestinal amoebiasis, bacteroides septicemia, and actinomycosis. It has been of no value in the treatment of tuberculosis.

Neomycin

Neomycin has been recently introduced as another antimicrobial agent with a wide selective antimicrobial action (Table VI).

Of particular interest is the effectiveness of this agent in infections produced by *Pseudomonas aeruginosa* and *proteus vulgaris*, organisms which are notoriously resistant to treatment with other anti-

TABLE VII

Type of Microorganism	Effective Antibiotic Agent
Hemolytic streptococcus	Penicillin, aureomycin, chloromycetin, bacitracin, streptomycin, neomycin, terramycin.
Nonhemolytic streptococcus	Penicillin, aureomycin, chloromycetin, bacitracin, streptomycin, neomycin, terramycin.
Staphylococcus	Penicillin, aureomycin, chloromycetin, bacitracin, streptomycin, neomycin, terramycin.
Pneumococcus	Penicillin, aureomycin, chloromycetin, bacitracin, streptomycin, neomycin, terramycin.
A. aerogenes	Aureomycin, chloromycetin, streptomycin, neomycin, terramycin.
E. typhosus	Aureomycin, chloromycetin, streptomycin, neomycin, terramycin.
E. coli	Aureomycin, chloromycetin, streptomycin, neomycin, terramycin.
Microaerophilic streptococcus	Aureomycin, chloromycetin, bacitracin, penicillin.
Anaerobic streptococcus	Aureomycin, chloromycetin, bacitracin, penicillin.
Gonococcus	Penicillin, aureomycin, chloromycetin, bacitracin, terramycin.
Clostridium welchii	Penicillin, aureomycin, chloromycetin, bacitracin.
Streptococcus faecalis	Penicillin, aureomycin, chloromycetin, bacitracin, neomycin.
B. anthracis	Penicillin, aureomycin, chloromycetin, neomycin.
Pseudomonas aeruginosa	Chloromycetin, streptomycin, neomycin.
Proteus vulgaris	Chloromycetin, streptomycin, neomycin.
Actinomyces bovis	Penicillin, bacitracin.
Endamoeba histolytica	Bacitracin, terramycin.
M. tuberculosis	Aureomycin, streptomycin, neomycin.

biotic agents except chloromycetin and to a lesser extent aureomycin and streptomycin. Its antibacterial effectiveness for the pneumococcus and streptococcus is somewhat less than that of penicillin and aureomycin, and approximately the same as penicillin for the staphylococci.

Administration and Dosage.—Neomycin may be administered parenterally or topically and the average adult dose for parenteral injection is 500 mg. every twelve hours for the average adult. Parenteral injection should be used with caution because of neomycin's toxic effects. When used topically, its effect has been noteworthy and not associated with toxic reactions.

Untoward Reactions.—Unfortunately renal irritation may occur with the use of neomycin. It is approximately twice as toxic as streptomycin, four times as toxic as chloromycetin, five times as toxic as bacitracin, and much more toxic than penicillin when used in mice.

Choice of Antibiotic Agents for Various Infecting Microorganisms

On the basis of data obtained from the literature and from our own experiments *in vitro* and *in vivo*, Table VII has been prepared to indicate the various antibiotic agents effective for the different strains of microorganisms. The choice open

(Continued on Page 605)

Complications of Diabetes

By Priscilla White, M.D.
Boston, Massachusetts

THE COMPLICATIONS of diabetes fall into four main groups. These are as follows: (1) ketoacidosis, (2) sepsis, (3) the neuropathies, and (4) the vascular lesions. It is the purpose of this discussion to evaluate the causes of these complications, their modes of prevention and their therapeutic management.

Ketoacidosis

To the common clinical causes of diabetic coma, namely, infection, overeating and the omission of insulin, one must add starvation as is encountered in weight reduction and pregnancy. The preventive treatment of ketoacidosis resolves itself largely into the education of the patient so that he may avoid overeating, avoid omitting insulin carelessly and know the wise use of supplementary doses of rapidly acting insulin at four-hour intervals, the amount depending upon the degree of reduction of the Benedict solution (such as units 12 if the reduction is red or orange, units 8 if yellow).

The plan for coma therapy in the George F. Baker Clinic is the following: insulin in doses from 200 to 2000 units in the first six hours of treatment administered subcutaneously unless the patient is unconscious. Then insulin administered subcutaneously is supplemented with insulin administered intravenously. The dosage depends largely upon the height of the blood sugar. Physiological salt solution is given intravenously in amounts varying from 3,000 to 12,000 c.c. in twenty-four hours. Gastric lavage is routine. Concentrated salt solution, 10 per cent, caffeine sodium benzoate and blood transfusions are used if the patient develops anuria or circulatory collapse. Sedation and glucose are forbidden. Sodium lactate solution has been given infrequently but is indicated if the acidosis has appeared refractory. With this treatment our patient survival has been 98 per cent.

The recent emphasis upon the treatment of diabetic coma throughout the country has concerned

the need for potassium therapy. Potassium deficit appears to result from diuresis and dehydration. The administration of insulin and of glucose accomplish the storage of glycogen and of nitrogen and thereby help to deplete the cells of potassium. Potassium deficit is suspected clinically by respiratory failure, the fish mouth expression of the patient and by muscular flaccidity. The electrocardiogram shows flattening or inversion of T waves, low voltage of the QRS complex. The chemical deficit is shown by the fall of serum potassium levels below the normal of 4 to 5.5 m.e.

At the outset of treatment the typical patient with ketoacidosis shows, in addition to the lowered base reserve, the elevated blood sugar and non-protein nitrogen, (1) lowered water volume in cells and plasma, (2) lowered value for sodium in cells, plasma and urine, and (3) normal level for potassium in cells and plasma.

After six to twelve hours of the treatment outlined, restoration to normal values is usually accomplished with the following exceptions: the water volume of the red blood cells is low; the level of serum potassium has fallen below that of the normal, and the level of serum chloride has risen above that of the normal.

Clinically the patient has recovered. Chemically the patient is still disturbed; therefore we wish to re-emphasize the importance of prolonged administration of fluid water by mouth or intravenously continued over a long period of time (days). The administration of potassium containing foods, beef broth, oatmeal, gruel, orange, milk should be aggressive. If the patient cannot retain fluid by mouth, 100 c.c. of a 2 per cent solution of potassium chloride solution may be given. This latter prescription should be controlled by chemical tests.

Infections

Cause and Prevention.—Specificity for the site of attack characterizes infections occurring in the diabetic. The sites commonly injured are the skin, bony structure, the urinary tract and the lung. Ketoacidosis increases the susceptibility of the lung to tuberculosis and of the urinary tract to pyogenic infections. The depletion of glycogen from the corium of the skin may increase the susceptibility of the diabetic to opportunist bacterial invaders. Thus it seems that good control of diabetes must be emphasized in the prevention of infections.

From the George F. Baker Clinic, New England Deaconess Hospital, Boston.

Presented at the Eighty-fifth Annual Session of the Michigan State Medical Society, Detroit, September 21, 1950.

COMPLICATIONS OF DIABETES—WHITE

Treatment.—If skin infections occur, the antiseptic most commonly used is Chlorophyl. ST37 and other azochloramines are also favored.

The advent of chemotherapy, largely penicillin, has revolutionized the management of carbuncles, no longer a surgical disease. Osteomyelitis of the toe, however, is still treated surgically with simple or transmetatarsal amputation.

Urinary Tract Infection: Minimal evidence of infection of the urinary tract is treated now with the same degree of seriousness as is minimal evidence of infection in the diabetic foot and for the same reason, the great chance of underlying vascular damage. If a clean specimen of the urine of a female patient reveals 10 white blood cells, or if a clean specimen of the urine of a male patient shows 5 white blood cells, a catheter specimen is obtained, cultured and appropriate chemotherapy or antibiotic therapy prescribed, namely, Gantrisin 4 grams daily for *E. coli*, streptococci (pyogenes and fecalis) and proteus; penicillin for streptococci, staphylococci and anerobes; streptomycin for *E. coli*; aureomycin or chloromycetin for staphylococcus.

Tuberculosis: The incidence of tuberculosis in diabetics remains high, and the death rate from it is still alarming. Prevention is sought by the avoidance of known contact and of ketoacidosis. Early diagnosis is sought through yearly roentgen-ray examination. Treatment for these patients remains radical lobectomy or pneumonectomy along with bed rest and antibiotics.

Neuropathies

Diabetic neuropathies are all too common. Any one or all of the following manifestations may be seen in the same patient along with an elevation of the total protein of the cerebrospinal fluid to a level of 60 mg. or above. The most common symptom is severe nocturnal pain with or without diminished or absent reflexes. Less common are nocturnal diarrhea, atony of the bladder and Argyll-Robertson pupil. Peripheral, central and autonomic nervous symptoms appear to be involved. The syndrome most responsive to therapy is nocturnal diarrhea, which appears to be controlled by the parenteral administration of crude liver extract. Recovery from peripheral neuritis can be guaranteed. Response to vitamin B therapy is usually slow. Palliative measures in the really severe cases include the intravenous administration

of 1 per cent procaine solution or of sodium pentothal.

Vascular Lesions

That positive correlation exists between the inception of vascular disease and poor control of diabetes is our contention. We have never seen a case of vascular damage in a perfectly controlled diabetic. The site of vascular damage in the diabetic depends upon the decade of the onset of diabetes. In youth the eye and kidney are involved, in middle age the heart, in the elderly the extremities and the brain.

Gangrene

The transmetatarsal amputation for gangrene of one or more toes has replaced the supracondylar type of amputation. The failures in this type of surgery have amounted to hardly more than 15 per cent. The evaluation of the patient's response to conservative treatment has been on the basis of very simple clinical tests, the reaction of the patient to infection, the ability of the involved area to heal and to bleed, the temperature of the skin, the response of the veins to superficial venous pressure and the degree of dependent rubor.

So far as the circulatory aids are concerned, vasodilator drugs have not been in general use in our clinic. Buerger exercises and venous occlusion machines are used. Lumbar sympathectomy may be performed upon young diabetics with early signs of vascular deficiency.

Coronary Occlusion.—Coronary occlusion is treated early as in the nondiabetic with anticoagulants and later with decrease in activity and in body weight.

Retinopathy.—Just as peripheral vascular disease is the chief enemy of the older diabetic, retinopathy is the chief enemy of the young diabetic. The typical retinopathy of the disease diabetes seen in youth is the small round hemorrhage. Sclerotic changes in the arteries may or may not be present, but changes in the veins are almost universal. The veins become dilated and sacculated. Exudates, usually waxy in character, sometimes cotton-wool, too, are common. Vitreous hemorrhage is the dreaded and frequent accident for this leads to retinitis proliferans. Contraction of the scar which results brings about detachment of the retina and the capillary transudate to hem-

morrhagic glaucoma which may necessitate enucleation of the eye for pain.

Prevention of retinopathy is sought today through control of diabetes, diet high in protein and the correction of capillary fragility. The test for measuring capillary fragility which is commonly used at the Deaconess Hospital is as follows: The petechiae in an area 6 cm. in diameter which has been under 80 mm. of mercury pressure for four minutes are counted. All individuals having more than thirty-five are treated with rutin in doses of at least 300 mg. daily. All patients with normal capillary fragility but with retinopathy also receive rutin. Since hemorrhages and exudates are reversible, it has been difficult in the sort period of time to evaluate the results. The opinion of the internist rather than that of the ophthalmologist is an optimistic one, and all patients who have had diabetes for ten or more years receive therapy if indicated.

Nephropathy.—The second most frequent complication in young diabetics is nephritis. Three types of nephropathy are observed: pyelonephritis, arteriolar nephrosclerosis (intercapillary glomerulosclerosis), and necrotizing papillitis. Pyelonephritis and necrotizing papillitis respond to appropriate chemotherapy. Arteriolar nephrosclerosis may be handled according to the clinical phase seen. The clinical picture observed most frequently is one which resembles the nephrotic state of chronic glomerulonephritis in which the nonprotein nitrogen is normal, serum protein low. There is reversal of the AG ratio and proteinuria is excessive. During this period the patient may be treated with a diet high in protein, at least 2 grams per kilogram of body weight; mercurials may be used cautiously, ammonium chloride freely, and amphogel if the serum phosphorus is elevated. As the nonprotein nitrogen rises, the protein in the diet should be lowered to 50 grams a day and mercurials and ammonium chloride avoided. The more radical types of therapeutic handling of nephritis have not proved effective with our diabetics. Thus, splanchnicectomy, which was attempted on three young diabetics, precipitated three immediate fatalities. The artificial kidney was used on one of our patients whose status was moribund. Perfect chemical reversal was accomplished but the patient died. The rice diet has not resulted in permanent improvement.

In addition to these complications in the past,

failures of growth and development and gross enlargement of the liver have characterized juvenile diabetes. Following more adequate treatment, the use of long-acting insulins and adequate dietary prescriptions, these two complications have disappeared. If growth failure occurs, it is still rare for the patient to respond to correction of diet alone, and thyroid, testosterone, or chorionic gonadotropin may be given to promote more rapid growth in retarded diabetic boys.

Brief mention of two complicating situations may be made here, namely, surgery and pregnancy in the diabetic.

General surgical procedures are carried on in the diabetic as in the nondiabetic, with preparation of the patient medically through parenteral fluids, vitamins and chemotherapy. The management of diabetes is stressed and, as with other individuals having surgical procedures today, early ambulation is the rule. Any anesthetic may be used.

Pregnancy in the Diabetic

Pregnancy in the diabetic requires special care. Maternal survival when pregnancy complicates diabetes is high but fetal survival has been low. Fetal survival is influenced by four different factors, namely, the control of diabetes, the occurrence of congenital anomalies, the degree of maternal vascular disease, and the imbalance of the sex hormones of pregnancy. The first and the fourth factors are correctible. The diet of the pregnant diabetic woman should be adequate in calories, 30 per kilogram of increasing body weight; high in carbohydrate, from 180 to 250 grams; high in protein, 2 grams per kilogram of body weight, and fat to complete the caloric prescription. In the past multiple doses of insulin, four or five a day, have been used in the obstetrical diabetic patient. In late pregnancy a single dose of NPH-50 insulin and one dose of rapidly acting insulin accomplish what four doses of insulin formerly accomplished.

The main part of our own management for the obstetrical diabetic patient concerns the prescription of estrogen usually combined with progesterone therapy. If estrogen is used alone, the patient receives ascending doses of stilbestrol as follows: up to the sixteenth week, 25 mg. daily; from the sixteenth to the twentieth week, 50 mg. daily; from the twentieth to the twenty-eighth week, 100 mg.; from the twenty-eighth to the thirty-second week, 150 mg.; and from the thirty-second week to

delivery, 200 mg., until the day of delivery. This treatment is supplemented, if the diabetes is severe and of long duration, by progesterone therapy and also by daily intramuscular stilbesterol instead of oral stilbesterol in the following doses: up to the twentieth week, 5 to 25 mg. of each; from the twentieth to the twenty-fourth, 10 to 50 mg. of each; from the twenty-fourth to the twenty-eighth, 15 to 75 mg.; from the twenty-eighth to the thirty-second, 25 to 100 mg. of each and from the thirty-second to delivery, 50 to 125 mg. of each. The clinical progress of the patient as well as chemical tests for chorionic gonadotropin and pregnandiol guides us in altering our hormonal therapy. Thus, if the patient shows signs of toxemia or has an excessive gain of weight without other signs of toxemia, the therapy is increased, or if the patient is on oral therapy, intramuscular therapy is substituted. The hormonal therapy is supplemented by large doses of ammonium chloride, by the restriction of sodium, and by a high protein diet. Timing of the delivery is considered essential. By the method of trial and error we have elected the beginning of the thirty-eighth week. When the cervix is not effaced at this time, cesarean section is performed. This is done under spinal anesthesia without preliminary medication. Ten per cent glucose is given preoperatively and in the afternoon of the day of surgery. The last dose of insulin (if long-acting insulins are used) is prescribed twenty-four hours before the delivery.

The care of the infant cannot be overemphasized for these sturdy-looking infants are potentially fragile and respiratory difficulties complicate the clinical course. Thus, they are drained posturally at birth. The upper air passages are aspirated every two hours for the first twelve hours. The stomach should be aspirated immediately at birth and every three hours for the first twelve. Continuous oxygen is used for a minimum of seventy-two hours. The infant is dehydrated by the postponement of oral and parenteral fluid for a period of forty-eight hours and stimulated to cry and turned frequently.

Of the four lethal complications of diabetes, coma, sepsis, tuberculosis and vascular disease, the first three have been controlled, leaving arteriosclerosis the chief enemy of the diabetic. Aggressive control of diabetes appears to be important in the program for its prevention.

CLINICAL USE OF THE NEWER ANTIBIOTIC AGENTS IN SURGERY

(Continued from Page 601)

to the clinician for the treatment of infections produced by these bacteria is indicated.

It is evident that two or more antibiotic agents are available for the treatment of many infections commonly seen in the practice of surgery. Pending receipt of susceptibility data, an antibiotic agent may be chosen for early treatment of acute or severe infections on the basis of a presumptive diagnosis. Since definite variation in susceptibility to the antibiotic agents may exist in the same strain, it is important to determine in the bacteriological laboratory the relative susceptibility of the infecting bacteria to the various antibiotic agents whenever possible. This is particularly true of infections which fail to show any sign of response within seventy-two hours after the onset of antibiotic therapy.

The development of acquired bacterial resistance has also been noted with chloromycetin, aureomycin, and terramycin, emphasizing the importance of using these antibiotic agents intelligently. Their administration without definite indication, without adequate dosage, or without properly timed and executed surgery if indicated should be avoided. Failure to drain abscesses before, at, or shortly after the onset of antibiotic therapy may permit the development of bacterial resistance and result in infections refractive to chemotherapy. It is not justifiable in our opinion to treat a patient conservatively with a chemotherapeutic agent and to postpone surgery when surgical treatment used in conjunction with antibiotic therapy will produce a more prompt, a safer, and a more satisfactory result.

The number of effective antibiotics is steadily increasing and from present indications it will continue to increase. To avoid haphazard therapy, it is strongly recommended that the clinician have available in local hospitals a good laboratory capable of giving readily and quickly information regarding the types of causative bacteria and their susceptibility to the various agents. A simple and effective method using small discs of filter paper impregnated with the various antibiotics is now available.

Clinical Significance of Hemoptysis

By Nathan Levitt, M.D.
Detroit, Michigan

THE OBJECT of this paper is the study of the incidence and significance of non-tuberculous hemoptysis, occurring in a series of patients suffering from various types of diseases of the chest admitted to Harper Hospital from 1938 to 1948, inclusive, as well as a ten-year survey of patients with pulmonary tuberculosis admitted to the Detroit Tuberculosis Sanatorium from 1935 to 1945, inclusive.

The incidence of hemoptysis and clinical findings in this latter group of patients with tuberculosis was compared with the nontuberculous group admitted to Harper Hospital.

Patients suffering from hemoptysis as a result of traumatic chest injuries or pneumonia were not considered in this study.

Hemoptysis is rarely disregarded by the patient. He will consult a physician for this complaint before any other symptom that may manifest itself. We have seen patients give a history of a weight loss up to 75 pounds or more in short periods of time; others have endured severe pains, loss of energy, et cetera, for many months before seeking medical aid; but the moment a patient sees the presence of blood in the sputum he becomes greatly concerned and seeks medical advice.

It is a well-established fact that in a large proportion of cases, hemoptysis is caused by pulmonary tuberculosis either at the beginning or during the course of the disease. Nevertheless, it must be borne in mind that this symptom is not pathognomonic of pulmonary tuberculosis.

Due to the increasing use of the x-ray, bronchoscope, and bronchographic studies, as well as our greater knowledge of the bacteriology and pathology of the diseases of the chest, we have found that there are many other causes for pulmonary bleeding.

Wurtzen²⁴ reports that of 5,264 admissions to a sanatorium 869 cases were admitted because of hemoptysis, but only 582 proved to have tuber-

From the Department of Internal Medicine, Harper Hospital, and the Detroit Tuberculosis Sanatorium, Detroit, Michigan.

Presented at Harper Hospital Staff Meeting, April 6, 1951.

TABLE I

Diagnosis	No. of Patients
Pulmonary tuberculosis	1,380
Bronchiectasis	406
Rheumatic heart disease	350
Carcinoma of lung	258
Empyema	130
Lung Abscess	110
Atelectases of lung	61
Foreign body	58
Metastatic carcinoma of lung	54
Pneumonitis	48
Hemorrhage of unknown origin	34
Ulcer of bronchus	20
Cysts disease of lung	17
Fungus infection of lung	9
Dry bronchiectasis	4
Adenoma of lung	4
Mediastinitis	2
Lipoid pneumonia	1
Sarcoma of lung	1
Total Number of Patients	2,947

culosis. In the remaining 287 cases, pulmonary bleeding was due to cardiac disease, epistaxis, carcinoma of the lung, and pneumonia.

We surveyed a total of 2,947 cases; 1,380 of these were patients with pulmonary tuberculosis, and 1,567 had various other types of diseases of the chest (Table I). Of the entire group of these 2,947 patients 717 (24.3 per cent) gave a history of hemoptysis (Table II).

Pulmonary Tuberculosis

In our series of 1,380 patients with pulmonary tuberculosis, hemoptysis was complained of in 340 cases (24.6 per cent). This percentage figure compares favorably with Minor's study¹⁴ of 1,000 sanatorium patients with tuberculosis, he observed pulmonary hemorrhage in 24.3 per cent of his cases.

In reviewing the histories of these patients with tuberculous hemoptysis, we still came across some cases of young people who gave a history of having felt perfectly well, when suddenly they had an urge to clear their throat, coughed, and blood appeared.

They were examined by their physicians and were told that the source of the bleeding arose somewhere in the mouth, nose, or throat, or at the root of the tongue, and upon being assured that their condition was not serious, and lulled into a state of false security, they returned to their jobs, only to break down again in a few months. Upon admission to the sanatorium they were found to be suffering from either a moderate or far advanced form of pulmonary tuberculosis.

Many observers¹⁵⁻¹⁷ have pointed out, over and over again, how frequently the source of bleeding was attributed to a bleeding point in the naso-

CLINICAL SIGNIFICANCE OF HEMOPTYSIS—LEVITT

TABLE II. INCIDENCE OF HEMOPTYSIS—PER DISEASE

Diagnosis	No. of Patients	Hemoptysis	Per cent
Pulmonary tuberculosis	1,380	340	24.6
Bronchiectasis	406	106	25.
Rheumatic heart disease	350	50	14.2
Carcinoma of lung	258	85	32.
Empyema	130	15	11.5
Lung abscess	110	39	35.
Atelectases of lung	61	2	3.2
Foreign body	58	5	8.
Metastatic carcinoma of lung	54	1	1.8
Pneumonitis	48	5	10.4
Ulcer of bronchus	20	20	100.
Cysts disease of lung	17	6	35.
Fungus infection of lung	9	2	22.
Dry bronchiectasis	4	4	100.
Bronchial adenoma	4	2	50.
Mediastinitis	2	1	50.
Total	2,911	683	23.4

pharynx in spite of the fact that hemorrhage in this area is very rare.

I agree wholeheartedly with Davidson⁴ who states, "It is impossible to lay too much stress upon this error, or to emphasize too strongly the principle that the occurrence of definite hemoptysis in a young adult should invariably be regarded as evidence of tuberculosis unless it can definitely be shown to be due to some other cause."

Bronchogenic Carcinoma

There were 258 cases of proven bronchogenic carcinoma in our series, of which eighty-five patients (32 per cent) complained of hemoptysis. The following symptoms were found to occur in this order of frequency: cough, loss of weight, chest pains, hemoptysis, dyspnea, weakness, wheezing, and hoarseness. Although hemoptysis may occur as an early symptom in patients with bronchogenic carcinoma, we found this symptom to occur late in the disease in our group. Our findings bear out the contention of Jackson and Diamond¹⁰ as to the relative rarity of hemoptysis as an initial symptom in bronchogenic carcinoma.

The occurrence of hemoptysis in an individual past middle age should always arouse the suspicion of the physician to the possibility of an existing bronchogenic carcinoma in his patient.

According to King,¹¹ bloody sputum which persists day after day for weeks is almost always from cancer and not from tuberculosis or other disease.

From our study of these 258 cases of proven bronchogenic carcinoma, we feel it advisable to repeat what we have said in a previous article on bronchogenic carcinoma¹²:

"That the majority of cases of lung cancer are diagnosed too late to do any radical surgery. Perhaps it is due to the fact that this disease masquerades under the disguise of the many commoner chest diseases, such as

bronchitis, pneumonia, tuberculosis, pleurisy, et cetera, that we do not suspect the presence of a pulmonary neoplasm.

"Since pneumonectomy is only possible in the early cases, it follows that results will be in direct ratio to diagnosis. In other words, the earlier the diagnosis, the greater the chance for cure.

"A good general rule to detect the early cases of bronchogenic carcinoma is to keep it in mind in every case of pulmonary disease in people of the cancer age.

"We should use every modern method at our command, such as x-ray bronchoscopy, exploratory thoracotomy, and the examination of sputum and bronchial secretion for cancer cells by a reliable pathologist, in an attempt to establish the diagnosis."

Bronchiectasis

We had 406 cases of bronchiectasis in this series. Of these, 106 patients (25 per cent) complained of hemoptysis, ranging from blood-streaked sputum in some cases to severe hemorrhages necessitating blood transfusion in others.

Abbott¹ observed that 43.5 per cent of his group of 239 patients with bronchiectasis had hemoptysis. Vinson²⁰ compared the incidence of pulmonary hemorrhage in 100 cases of active tuberculosis, 100 cases of chronic bronchiectasis, and 100 cases of patients suffering from mitral stenosis with dyspnea on exertion and found the highest percentage of pulmonary hemorrhage occurred in those cases of chronic bronchiectasis.

In this group of 406 cases of bronchiectasis there were also present four cases of the so-called dry or hemorrhagic bronchiectasis, in which a sudden and profuse hemorrhage was the only symptom. However, on bronchographic examination, they were found to have dilated bronchi characteristic of bronchiectasis. These cases can easily be mistaken for tuberculosis, and a careful search for tubercle bacilli should always be made to exclude this disease. Six patients in our series suffering from bronchiectasis were admitted and treated for pulmonary tuberculosis in various sanatoriums for periods of time ranging from six months to two years before the diagnosis of bronchiectasis was made.

Metastatic Carcinoma

In our fifty-four cases of metastatic carcinoma of the lung (Table III), there was only one case of hemoptysis in this group (1.8 per cent). Carcinoma of the breast was the primary site in this instance. Farrell⁵ reports a series of seventy-eight cases of pulmonary metastasis, in which six cases (7.6 per cent) gave a history of hemoptysis.

CLINICAL SIGNIFICANCE OF HEMOPTYSIS—LEVITT

TABLE III. INCIDENCE OF LUNG METASTASIS

No. of Cases	Organ	Hemoptysis
29	Breast	1
3	Thyroid	0
3	Uterus	0
3	Cervix	0
3	Kidney	0
2	Rectum	0
2	Prostate	0
2	Bladder	0
2	Bone	0
2	Hypernephroma	0
1	Colon	0
1	Retroperitoneum sarcoma	0
53		1

Occasionally we may get hemoptysis from metastatic tumors of the lungs simulating primary bronchogenic carcinoma; two such cases are reported by Freedlander and Greenfield.⁷ In both of their cases hemoptysis was the presenting symptom of bronchial invasion by metastatic growth which led to the erroneous preoperative diagnosis of bronchogenic carcinoma. They further emphasize the fact that patients in previously good health may have hemoptysis caused by metastatic pulmonary tumors, and these tumors may invade the bronchi so that bronchoscopic biopsy seems to confirm the erroneous diagnosis of primary bronchogenic carcinoma.

According to Fried,⁸ hypernephroma is the tumor par excellence which "chooses" the wall of the bronchus. As a rule, hypernephroma produces spherical or round (cannonball) metastasis. We should also keep in mind the chorionepithelioma; these tumors are characterized by vaginal bleeding, chest pain and cough, and metastasize to the lung causing hemoptysis. Wilson²² reports five cases of chorionepithelioma. In three of his cases there was extensive metastasis to the lungs and hemorrhage in one of the cases.

Bronchial Adenoma

There were four cases of adenoma of the bronchus. Hemoptysis was complained of in two cases. Hemoptysis is a prominent symptom in adenoma of the bronchus; it affects females more often than males. Adenomas as a rule occur in younger individuals, usually under fifty years of age in counterdistinction to carcinoma which is present in patients over fifty years of age.

In a series of 123 cases culled from the literature by Fried,⁸ 109 affected persons were under fifty and only thirteen above that age. Jackson and Diamond¹⁰ reported a series of eleven cases of adenoma of the bronchus with expectoration of blood in 100 per cent of the cases.

Many observers^{2,9,13} claim that these tumors may become malignant and metastasize to distant organs and should be removed by lobectomy or pneumonectomy as soon as the diagnosis is made.

Phillip et al¹⁸ describe four cases of adenoma of the bronchus. Two of the four showed malignant degeneration and metastasis, one to the brain and one to the spine. They state, "Although there may be some plausible debate as to the cell origin and growth rate, there is little doubt of the ultimate course of the tumor. Our cases, and cases reported by other surgeons previously cited in this paper, give convincing proof of the malignant nature of the so-called adenoma. One of us previously ascribed the term 'malignant adenoma' to this type of tumor. Now it appears that it may be prognostically sagacious to consider them carcinoma in general and accord them the serious respect given carcinoma of the lung."

Pulmonary Abscess

Our series consisted of 110 cases of lung abscesses. Putrid as well as nonputrid abscesses were included in this group. Thirty-nine patients (35 per cent) complained of hemoptysis. This symptom was more prominent in the chronic cases of lung abscess than in the acute ones. It should be emphasized that severe pulmonary hemorrhages are more apt to occur in cases suffering from putrid lung abscesses.

Hemoptysis can be a very serious complication in lung abscesses as demonstrated by Ray,¹⁹ who reported a series of fifty-seven cases of putrid lung abscess. Pulmonary hemorrhage occurred in twenty-five (44 per cent) of the cases, and fatal hemorrhages resulted in seven cases (12 per cent).

In Diamond and Jackson's series¹⁰ there were fifty-one cases of lung abscess, with three deaths from pulmonary hemorrhage, an incidence of 5.8 per cent.

Rheumatic Heart Disease

Of 350 cases of rheumatic heart disease which were surveyed in our series, fifty (14.2 per cent) gave a history of hemoptysis either before or during their stay at the hospital. The symptoms complained of in this group of fifty patients, in association with hemoptysis, were shortness of breath, palpitation, and precordial distress.

The abnormal findings in these fifty patients were as follows: mitral stenosis was present in all of the fifty cases, pulmonary infarction in fifteen patients, congestive heart failure in ten cases,

auricular fibrillation in fifteen cases, and extreme cardiac enlargement in sixteen of the patients.

The clinical course and progress was much poorer in these patients with hemoptysis than in the cases of rheumatic heart disease in which there was no bleeding.

Wolfe and Levine²³ reported a series of 521 patients suffering from rheumatic heart disease, with fifty cases of hemoptysis, an incidence of 9.5 per cent. They make the observation, with which we concur wholeheartedly, that hemoptysis in mitral stenosis with cardiac enlargement is a poor prognostic sign.

The mechanism of hemoptysis in these cases is explained by Wolfe and Levine²³ in this manner: "The occurrence of hemorrhage depends not only on the degree of congestion and the height of the pulmonary pressure, but also on the presence of sclerosed vessels which rupture under the strain of congestion and hypertension (pulmonary)." Ferguson et al⁶ have shown that there are direct venous connections between the bronchial and pulmonary veins, and that mitral stenosis causes dilation of the bronchial veins in the submucosa of the larger bronchi, as a result of the establishment of a collateral flow through them. In cases of mitral stenosis in which infarction and acute pulmonary edema are not present, hemoptysis is probably due to bleeding from these dilated veins.

Vincent²⁰ reports the incidence of pulmonary hemorrhage in a group of 100 cases suffering from mitral stenosis with dyspnoea on exertion. Eighteen of this group had pulmonary hemorrhage. The hemorrhages were described as slight, or "streaks of blood only" in ten cases. In five cases it was moderate, in two it was severe, and in one very severe. Several hemorrhages occurred in the same patient in twelve cases. Hemorrhage followed exertion in seven cases. He further states, "Although pulmonary hemorrhage is absolutely and relatively less common in mitral stenosis than in pulmonary tuberculosis, it is common enough to warrant consideration in differential diagnosis."

Miscellaneous Conditions

Hemoptysis occurred in twenty patients in which the x-ray findings were entirely negative, but on bronchoscopic examination a bronchial ulcer was found in each of these cases apparently causing the bleeding.

We had nine cases of fungus infection of the lungs; two patients complained of pulmonary bleeding in this group.

Of 130 cases of chronic empyema studied, fifteen patients (11.5 per cent) complained of hemoptysis in association with their illness. This symptom was present at the onset of their original attack of pneumonia.

There were fifty-eight cases of foreign body in the tracheo-bronchial tree, of which five cases presented hemoptysis. Cystic disease of the lungs was present in seventeen patients; six of these complained of pulmonary hemorrhage. The diagnosis of nonspecific pneumonitis was made in forty-eight cases. Pulmonary bleeding occurred in 10.4 per cent of this group; and in sixty-one cases of pulmonary atelectasis, etiology undetermined, there were two instances of hemoptysis.

Hemoptysis of Unknown Origin

Thirty-four of our cases were labeled as hemoptysis of unknown origin. The only symptom present was that of pulmonary bleeding. Every diagnostic measure such as physical examination, x-ray, bronchoscopy, bronchography, and bacteriological examination of the bronchial secretions were negative. What is the cause of hemoptysis in these patients?

Many observers have offered various explanations. Wessler²¹ has designated this condition as "benign" or essential hemoptysis to indicate its harmless character and also the fact that it is not associated with any gross pulmonary or bronchial disease. He further remarks that bleeding in these cases comes from the mucosa of one of the smaller bronchi, and that it results from the erosion of a very small vessel.

According to Myerson,¹⁶ the bleeding is caused by an exposed blood vessel or vascular lesion in the wall of a peripheral bronchus. Referring to the etiology of hemoptysis of unknown origin, Diamond and Jackson¹⁰ state, "It seems to us that the likelihood of existence of ulcerative lesions in the segmental bronchi and their branches merits serious consideration." They further assert, "Fortunately, the prognoses for life in these patients is excellent, for, although the hemorrhages are prone to recur over a period of many years, and at times may be so profuse that they cannot but occasion a good deal of alarm, experience has taught us that the likelihood of their resulting in the death of the patient is extremely small."

Abbott¹ prefers to call these cases "pulmonary bleeding, etiology undetermined." According to him they may represent bronchial ulceration distal

to the range of vision of the bronchoscope, small infarctions, pulmonary hypertension, blood dyscrasias in the stage of associated normal laboratory findings." We feel that these cases should be under supervision and check-ups made from time to time so that no serious lesion such as a bronchogenic carcinoma is missed.

Conclusion

Our study indicates that hemoptysis denotes serious pulmonary pathologies in the majority of patients. It cannot be emphasized too strongly the need for a complete and thorough study of these cases in order to establish a diagnosis. The examination should consist of a roentgenograph and bronchoscope examination of the chest, including bronchography whenever indicated. In patients of the middle age group with hemoptysis, the possibility of a bronchogenic carcinoma should always be thought of first, and in addition to the above diagnostic measures, we should include the study of the bronchial secretions for the presence of malignant cells.

Bronchoscopic examination should be done in every case of hemoptysis where the diagnosis is in doubt, with the exception of those cases where a definite disease entity is known to exist such as pulmonary tuberculosis, definite blood dyscrasias, or rheumatic heart disease.

From our study of the incidence and significance of hemoptysis in this series of cases we are in agreement with the observations of Andosca and Foley.³ That the commonest causes of hemoptysis in adults between twenty and forty years of age, in order of frequency, are pulmonary tuberculosis, bronchiectasis, and mitral stenosis. In adults between the ages of forty and sixty the causes, in order of frequency, are bronchogenic carcinoma, pulmonary tuberculosis, and bronchiectasis.

Summary

A series of 2,947 cases of diseases of the chest was surveyed, of which 717 presented hemoptysis.

One group consisted of 1,380 cases of pulmonary tuberculosis, with an incidence of 24.6 per cent of hemoptysis. The other group consisted of 1,567 patients with various types of nontuberculous diseases of the chest, with an incidence of 24.5 per cent of hemoptysis.

The frequency of hemoptysis in various diseases of the chest, as presented, and the necessity of a follow-up in cases of hemoptysis of unknown origin were stressed.

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Ovarian Resection— Oviectomy—or Absolute Conservatism

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THE REMOVAL of the human ovary goes back historically to a very considerable figure, to Ephraim McDowell, who intrepidly removed an ovarian tumor without adequate anesthesia and with little other than rugged human perseverance to supplement his efforts. That he was successful probably resulted from many preoperative considerations to which he paid diligent attention, but which are not recorded in his notes. The fact remains that he led the way toward popularizing an operation which has become so common that it is second only to appendectomy in the experience of the country at large, both lay and professional. Indeed, whereas 100 years ago McDowell's triumph was of historical magnitude, today the average surgeon who has occasion to enter the abdominal cavity feels a little sense of remorse if he has not at least inspected the ovaries, whereas the gall bladder, or more often the appendix, may have been the occasion of his right-sided interest and the real indication for opening the abdomen. And so it has come to be, that we have these right-sided abdominal surgeons—made more exclusively right-sided by our friend McBurney. And because we have a right-sided surgical community of opportunity, so we have right-sided advantages and disadvantages accruing to the community as a whole and our women in particular.

This, therefore, is the occasion of our discourse: why is it that the right-sided abdominal surgeon finds so much wrong with the right ovary, while the left ovary, which is so much less frequently exposed to the eye of the surgeon, seems to be relatively immune to all the things that happen on the right side?

You observe at once that we are dealing in *reductio ad absurdum*. This may be justifiable or not. We will leave you to judge. We feel that because general surgeons have frequent occasion to enter the abdomen, they should be well trained not only in gastrointestinal matters, but in those con-

cerning the lower abdomen and pelvis of the female patient.

Furthermore, we feel that these same gentlemen who open the lower abdominal cavity should have some background of interest and sense of responsibility in female physiology and pathology. A very large proportion of them have neither. And, furthermore, they are insulated with an inheritance of indifference to the woman and her problems such that they have very slight regard for the physiologic importance of the female gonad. To many it is merely the female gonad which is only remotely as useful as the male analogue, and because it is infinitely inferior in importance, it need not have great consideration as to its preservation. And so we come to our common surgical attitude that the human ovary is an offending organism, and that it can only be wisely treated by constant supervision and frequent denudations of various sorts. Truly one should wonder that the human race did not begin to disappear with the advent of Ephraim McDowell. There must be something in paired appendages after all. But how much? That is the question, and I think we gynecologists who have an opportunity to see patients, say fifteen years after they have had an ovary or a portion of one removed, may have some important information. My own distinct impression is that these women patients so treated always have some demonstrable physiological handicap. They may do well for a long time, but most of them have a shortened reproductive period, and many have a premature climacteric syndrome. In other words, *one cannot remove an ovary or a portion of it without a very considerable chance of producing undesirable physiological effects somewhat later in life*. The general surgeon still does the bulk of the gynecological surgery in this country. It is well, therefore, for us to consider what the common experience in the country may be.

Ovarian Cysts

An inadequate understanding of the life cycle of ovarian cysts has led to much radical surgery in the treatment of them, and to an unfortunate attitude toward the conservation of ovarian function. The pathologist in the laboratory still is haunted by the twin specimens which comprise the commonest entry into his sanctum—that is the appendix in various degrees of pathological change, plus an ovary containing a small cyst, and not infrequently the cyst is a corpus luteum or at least a simple serous cyst. The surgeon removing an appendix

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much too often sees a cyst of the ovary, and because he feels that it may be harmful or may become so, he takes it out by the easiest method, namely, removal of the entire ovary and cyst. The primary intention of the surgeon is most laudible in that he is trying to save his patient from future discomforts in so doing. The result, however, is that there are far too many women in these United States who, during appendectomy or because of some other indication for laparotomy, are deprived of an ovary and are trying to meet the normal, physiological demands of wifehood and motherhood with a decreased background of ovarian function. These women, in many instances, encounter serious difficulties. The thesis that one paired organ, such as the ovary or kidney, can do the work of two if need be is not true in the case of the ovary.

Of all the endocrine glands, the ovary seems to be the one having the least latitude and does not seem capable of maintaining a constant or greatly increased physiological activity over a long period of time. Thus when one ovary is removed, one has definitely decreased the ovarian function of the woman in amplitude, to a certain extent, but almost always in duration. This being true, it is obvious that we should always conserve ovarian tissue, particularly during the childbearing years, and as we shall see, afterward too. McBurney has unwittingly become one of the greatest benefactors of womankind because the incision which he popularized made the left ovary inaccessible to the surgeon doing an appendectomy. This organ has therefore remained outside his purview with its share of cysts, corpora lutea, et cetera. So it is, that the great majority of our women treated for appendectomy via the McBurney incision still have the left gonad intact; whereas those who have been given a rectus or midline incision may have not been so fortunate. Not infrequently both ovaries have been "pared for cysts," one or both removed, or occasionally due to "great conservatism" both ovaries have had resection of cystic bodies.

Not only general surgeons are responsible for the misconceptions concerning the reduction of ovarian tissue: radiologists have advocated the radiation of the ovary for all manner of conditions, more recently for malfunction and infertility. And still more recently, sincere gynecologists such as Stein and also Meaker have advocated the resection of a wedge of ovarian tissue "to improve ovarian function and balance." If those devoted to the special

care and study of the gynecological sphere can advocate such crass procedures, no wonder the surgeon somewhat removed from responsibility can be excused. Actually, neither can be acquitted of violation of the woman's best interests by removal of ovarian tissue.

The other great difficulty of many operating surgeons is that they have not had an opportunity to become familiar with the true characteristics of ovarian cysts and, thus, to be able at the operating table to form a reasonable picture of the implications of this or that variety, and so to differentiate between those requiring complete and radical excision on the one hand and those which are benign and are better treated with great conservatism. The pity is that most of the ovarian cysts which accompany appendices to the pathologist are benign cysts—frequently corpora lutea or follicular cysts—which nature might have adequately supervised if given the chance. We must, therefore, make a plea for more complete pathological experience and training for our abdominal surgeons. With this in mind, let us consider the common ovarian cysts, including those which are benign and those which may have malignant implications.

The subject is really not a large one as far as common experience is concerned. If we were to include all the neoplasms of the ovary, we should need a very considerable space of time and facility. However, we can cover about 85 per cent of the problem if we consider four or five entities, and the subject can be further simplified if we remember that some of these are related one to another. It is amazing therefore that so much haphazard surgery should be caused by misconception. We wish to repeat that it is of the greatest importance, as far as gynecology is concerned, that our surgeons understand the life histories of these common ovarian neoplasms. Once this is achieved, we can anticipate a better result as regards the welfare of our women.

The background of the physician's and surgeon's concern about ovarian cysts is not difficult to understand. The dermoid cysts may become twisted on their pedicles—or simple serous cysts may be considered insignificant, whereas they may be serous cystadenomata of benign or malignant implications. Or a cyst may be of endometrial origin and thus give rise to progressive discomfort instead of being a corpus luteum or a graafian follicle cyst. And these are the sum total of the ordinary possibilities. It behooves us therefore to know these

entities exceedingly well, and thus we have the burden of our discourse clearly outlined.

Common Ovarian Cysts

Dermoid cysts may be confused with other moderate-sized ovarian cysts or tumors. But if we remember that they are seldom malignant, that they tend to float about the abdomen, and that about 70 per cent of them contain calcareous deposits which may be seen in the x-ray film, then we cannot only recognize them but we may have a clear idea of their potentialities for harm. The latter includes three considerations: (1) they may become twisted upon their pedicles, (2) they may gradually expand and destroy the ovary in which they arise due to pressure, and (3) they are about 20 per cent bilateral, so that if one is found in one ovary there is one chance in five that the other ovary will produce one sooner or later. This is a matter of some concern of course when we deal with young women desiring a family or in the early stages of acquiring one. Dermoids are easily recognized at the operating table and usually demand a unilateral oöphorectomy. However, occasionally one can resect a cyst and leave from one-half to one-third of an ovary. This is a most worthwhile procedure, even when the opposite ovary is normal.

Inflammatory cysts are easily recognized because of their location between contiguous layers of peritoneum and because of the adhesions which usually surround them. Radical surgery is rarely justified in the treatment of inflammatory cysts. The surgeon may be quite unhappy after opening an abdomen, thinking of other more serious entities, and then discover that his patient has simple inflammatory cysts. It takes not only a knowledge that these structures are not harmful in the long run, but also the greatest courage of one's convictions to close the abdomen without the removal of tubal or ovarian structures. This is, however, all that is indicated in the great majority of instances of this kind.

The serous cysts however, provide a more formidable consideration, first as to whether they are simple serous cysts or cystadenomata, and if the latter, whether they are malignant, and if so, whether unilateral or bilateral. Simple serous cysts are small, often unilocular, thin walled, contain watery straw-colored fluid and no papillary processes. After resecting a small cyst from the ovary, the surgeon can open or have his pathologist open

the cyst for his inspection. Usually papillary processes of any malignant importance are easily visible to the unaided eye. So it is possible to almost at once differentiate between benign and possibly malignant cysts. It is the grossly papillary cystadenomata which we all fear that justifies radicalism. For we cannot cure cancer of the papillary serous variety. We know it always arises in benign serous cystadenoma, and furthermore we also know that it is frequently bilateral. This group of ovarian tumors constitutes the only real justification the surgeon has for extreme radicalism in the treatment of ovarian disease. It is of paramount importance, therefore, that he be acquainted with the disease so that he can differentiate it from others which may simulate it. The details of diagnosis we shall consider later.

The greatest, single stimulus for ovarian removal comes to the surgeon when he is confronted by what he thinks to be an endometrial cyst. "Chocolate cyst" is the old name for it. It grows indefinitely in response to ovarian or estrin therapy stimuli, producing extensive and very dense adhesions, associated with pain, particularly before and during the menstrual period. It is the pain and the presence of an abdominal mass which induces the surgeon to open the abdomen in this instance, and in the presence of these indications he will usually not be far wrong in so doing. However, it is not these findings which do the greatest harm concerned with this entity. It is the fear of it in the surgeon's mind, so that when the abdomen is opened for some other reason, such as an appendectomy, and an ovarian cyst with dark coloration is found, the doctor is induced to remove the ovary or a large portion of it. He does not realize that in the absence of symptoms a corpus luteum cyst or a hemorrhagic graafian follicle may be much more likely, and may very closely resemble the endometrial cyst in appearance, and that the corpus luteum cyst and graafian follicle cyst are essentially nearly normal physiological bodies which nature can heal very well indeed. On the other hand, the endometrial cyst never becomes malignant, and one can always afford to palliate it. In addition the androgens have been found to be quite efficacious in holding these growths in abeyance, and even in causing definite retrogression. So the similarity between endometrial cysts and other ovarian cysts, principally those of corpus luteum origin, cause the greatest loss of ovarian tissue at the operating table, far more than those associated with malignant disease.

When one realizes that many of these losses occur in relatively young women, many of whom have not had a chance to establish a home and a family, then the true implications assume tragic proportions. Certainly this is an area in which the abdominal surgeon should be so well tutored as to not commit this blunder, and yet today, I must repeat, this syndrome constitutes the background responsible for the removal of more normal or slightly pathological ovaries than any other. That it is unnecessary is all the more reason for calling it to the attention of the profession. We have been told about it in various ways and yet we have somehow escaped the realization of its meaning.

Preoperative Diagnosis

Benign cysts, such as graafian follicle cysts, corpus luteum cysts, simple serous cysts and endometrial cysts are usually small. They grow slowly or regress and seldom exceed more than 5 or 6 cm. in diameter. Because they often regress we can usually well afford to watch small ovarian cysts in patients who are co-operative and who will return for examination from time to time.

The dermoid cyst carries more sinister implications because it does not regress; furthermore it may cause an acute episode by becoming twisted upon its pedicle, and in addition, about a fifth of them are bilateral. Hence if they tend to float up into the anterior abdomen when the patient is lying on her back, and if they show calcareous shadows in the x-ray plate, then they had better be removed in as conservative a manner as possible.

If a small cyst of the ovary is associated with shotty nodules in the cul-de-sac, one should promptly think of the possibility of papillary tumors or of endometriosis. The latter will often be associated with progressive dysmenorrhea whereas the former is usually quite asymptomatic. Either entity is worthy of a laparotomy in my opinion. Under these circumstances it will be extraordinarily seldom for one to find a benign functional cyst such as those associated with the graafian follicle or the corpus luteum. One usually has to decide between dermoids, cystadenomata, endometriosis and inflammatory inclusion cysts.

The great classical carcinoma of the ovary, of course, has its background in the serous papillary cystadenomata; because they are frequently bilateral, and because we cannot cure them once they become malignant, these tumors constitute the only common indication for radical ovarian

removal. When found, they should be taken out completely, and even normal-looking ovarian tissue should be removed because of the tendency to bilateral involvement. Recognition at the operating table is therefore most important. Usually one sees papillary processes on the surface of the ovarian tumor or upon the peritoneum.

Sometimes, however, even large cystadenomata give no gross indication of their character. Then the character of the cystic fluid becomes important. In evacuating the cyst the rubber glove can easily be moistened with a little of the cystic fluid. If it is mucoid or semi-slimy, then one need not usually worry because the pseudomucinous cystadenomata are so infrequently malignant as compared to the serous variety that one can usually afford to be somewhat conservative in the treatment of them. On the other hand, if the large multilocular cyst contains straw-colored or bloody fluid which does not feel slimy, one should be quite radical.

On almost all other occasions one should be imbued with the need for conservatism. Small ovarian cysts and tumors may often be resected so as to leave a portion of the ovary and its blood supply intact.

Endometriosis may form an exception, and this benign lesion is almost the only exception to the above rule. This is particularly true in young women. Hence one should temporize as far as possible in order to preserve the childbearing function. In those over thirty-five or forty years of age who have had symptoms, particularly if the growth has involved bowel or ureteral structures, one may be quite justified in being radical with the surgical approach. However, in these days of potent androgen therapy, we have often found that surgery could be obviated in part or completely by adequate dosage of androgens by mouth.

What we have said is the essence of the matter. We are well aware that having read this dissertation no surgeon will learn much unless he has imbued in himself the desire to sound the depths of this over-simplified presentation. Our effort therefore is first to present the bald truth as regards present practice in the matter of treating these ovarian conditions, and second to encourage all surgeons by presenting a brief outline of the essentials which will assist them in treating the great majority of their ovarian cyst cases well. It will remain for experience, reflection and study of the literature to make all of us truly wise and humane in our gynecological practice.

Recognition and Treatment of Vitamin D Resistant Rickets

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ALTHOUGH refractory or vitamin D resistant rickets has been considered a rare disease up to the present time, recent observations at the University Hospital have made us acutely aware of the fact that it is not as uncommon as the literature would indicate. Over a period of about fifteen years we have seen seven children in which the diagnosis of refractory rickets was made. McCune⁵ has observed ten patients with this form of rickets at the Babies Hospital, New York City, and states that up to 1949 only thirty cases have been reported in the world medical literature. Undoubtedly many examples of the disease remain unrecognized, and as a result these children are often subjected to needless or ineffectual orthopedic operations. As an aid to earlier recognition and better treatment of the condition this report is made.

The outstanding clinical features of vitamin D resistant rickets are the appearance of signs of the disease late during the first year or the second year of life. In spite of usually effective doses of vitamin D the changes in the bone progress and persist into childhood, resulting in skeletal deformities of considerable severity. Bowing of the legs, coxa vara, knock-knees and "saber shin" are more common and of a greater degree in most cases of refractory rickets than in ordinary or infantile rickets. Fractures of the green-stick variety are frequent and angular deformities of the upper extremities may be present. These children have often been diagnosed as representing one of the chondrodystrophies because of the persistence of the changes and the resulting dwarfism (Fig. 1).

Many patients (including five of our seven cases) are subjected to corrective osteotomy before the pathogenesis of the disorder is recognized.

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JUNE, 1951

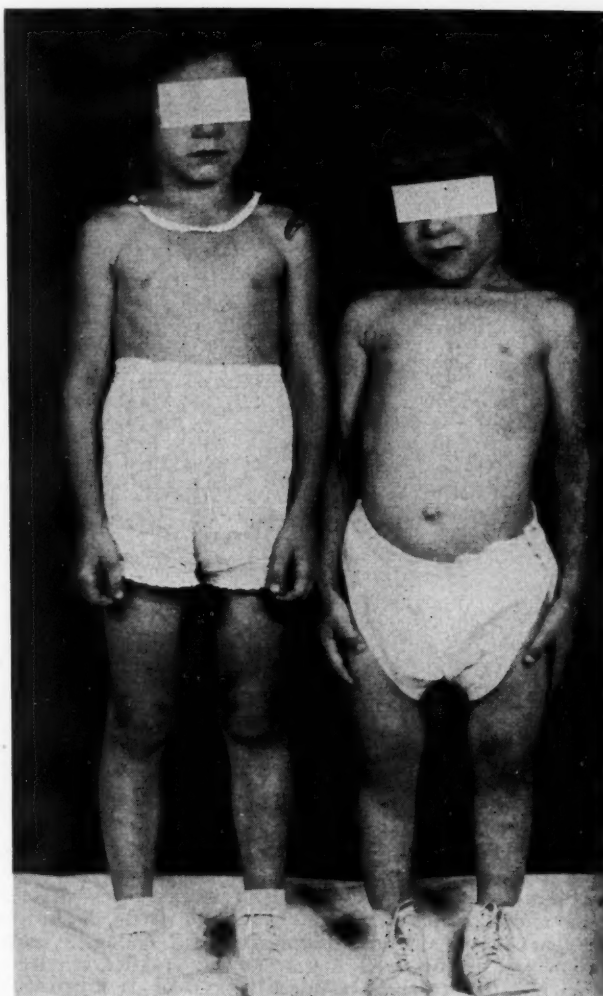


Fig. 1. Patient I. D., a six-year-old girl (right) with refractory rickets, shown with her sister, aged four (left). Diagnosis of active rickets was made three years earlier but retracted when child failed to respond to usual anti-rachitic measures. Note pronounced dwarfism, protuberant abdomen and bowing of femurs. Tibias have been straightened temporarily by osteotomies. Although patient was discharged in 1942 as an example of Morquio's disease (atypical chondrodystrophy), review of her record indicates that she is an unquestionable example of refractory rickets.

This is one of the tragic complications of this disease. Although the immediate results of such procedures may appear to be satisfactory, the deformities soon recur because the relatively soft bone will not hold its corrected position. Only after adequate therapy and normal mineralization of the skeleton are operative remedies indicated.

Blood chemistry findings are typical in refractory rickets. The serum calcium is normal (9 to 11 mg. per cent), the serum phosphorus is invariably lower than normal for children, often being in a range of 2 to 3.5 mg. per cent. In contrast to ordinary rickets, even huge doses of vitamin D usually do not cause a rise of the phosphorus to normal levels

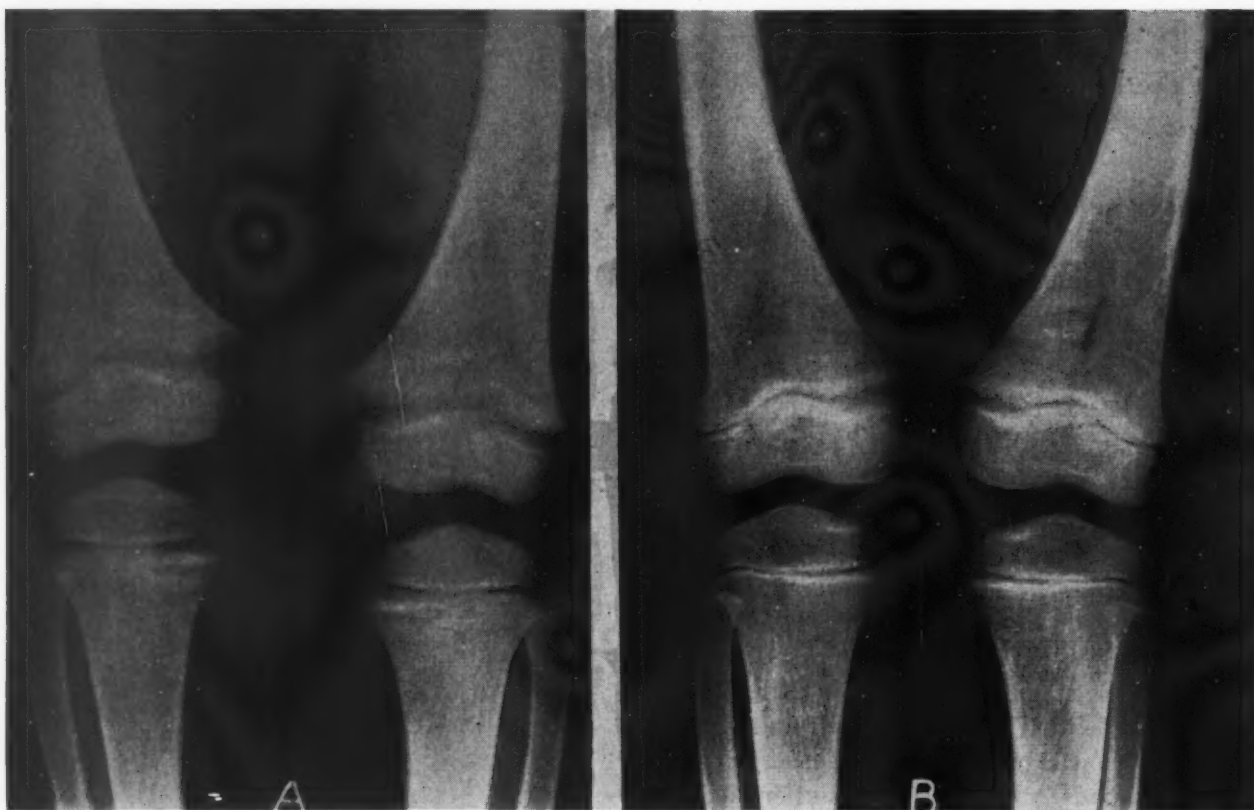


Fig. 2. Patient C. B., a four-year-old girl, was first seen in February, 1949, with history of bow legs and waddling gait since the age of ten months. Dietary history indicated seemingly adequate vitamin D intake. Physical examination showed dwarfism, extreme bow leg deformity, pot belly and accentuated lumbar lordosis. Routine urine and blood examinations were negative. Serum calcium was 10.9 mg. per cent; serum phosphorus 2.5 mg. per cent; serum alkaline phosphatase 19.2 Bodansky units. Blood urea nitrogen was 13.5 mg. and a urine concentration test in fourteen hours showed specific gravity of 1.030. Metabolic balance studies showed the patient to be in negative calcium balance.

X-rays of tubular bones on February 25, 1949 (A) showed typical signs of active rickets (see text). She was given intensive vitamin D therapy (February 25 to March 24, 1949, 15,000 units daily; March 24 to May 28, 1949, 50,000 units daily; May 28, 1949, to June 1, 1950, 150,000 units daily with occasional interruptions).

Roentgenograms on June 3, 1950 (B) showed apparently complete healing of patient's rickets. Numerous interval films had demonstrated only partial regression of the rachitic process.

during or after complete healing has taken place.³ The blood alkaline phosphatase level is always elevated and has been observed to exceed 30 Bodansky units.² Other chemical values of the blood are normal.

Further studies on these patients show a consistent negative calcium and phosphorus balance until unusually large amounts of vitamin D are ingested. In one of our patients positive balance was not obtained until 500,000 units of vitamin D daily were taken. When healing has been complete, the dosage necessary to prevent relapse may be reduced to about one-half of that originally given.

The exact etiology of this condition remains unknown. Decreased urinary calcium excretion is not as prominent a feature as it is in ordinary rickets. There is, however, decreased absorption of calcium and phosphorus from the intestinal

tract, and this continues in the presence of usually adequate vitamin D, or when the intestinal tract is made more acid which should favor absorption of calcium.⁶ The relatively frequent occurrence of the disease in more than one member of a family has been observed by others^{2,3} and in two children of our series. This would indicate that in some instances the metabolic error is an hereditary one.

Diagnosis depends upon a combination of several factors. As previously indicated, the earliest clinical signs are not unlike ordinary rachitic changes. The fact that they become progressive in the presence of the usual antirachitic therapy should make one suspicious. Ordinary rickets has a great tendency to heal following infancy and during early childhood as growth slows down. This is not true in refractory rickets. Deformities, often most pronounced in the lower extremities,

become extreme and lead to dwarfism of a moderate or marked degree. No other signs or symptoms are present. Appetite, activity, and mental alertness remain as usual. Occasionally vague pains of the joints are complained of and are proportionate to the degree of deformity.

Roentgenologically, vitamin D resistant rickets has much the same appearance as other types of rickets (Fig. 2). There is generalized rarefaction and coarsening of the trabecular pattern of various bones, irregular fraying of the epiphyseal plates, cupping of the ends of the shaft, and widening of the space between the epiphyseal ossification centers and the shaft. Secondary deformities such as bowing and fractures are often more profound than in ordinary rickets, probably because the age of the patient is more advanced and weight bearing has been more prolonged. It has also been our experience that rachitic changes are observed in relatively unusual locations in the refractory variety such as angles of the scapulas, the elbow and ischiopubic synchondroses. The long bones may appear short and broad as in chondrodystrophy. Finally, the lamina dura around the teeth is either absent or poorly delineated. Although the roentgenologist cannot make a definitive diagnosis of refractory rickets, he should suspect it in any patient past the age of two or three years who has roentgenologic signs of active rickets. A more detailed description of the roentgenologic findings has been published elsewhere.⁴

The typical laboratory findings have been enumerated. These will not rule out the diagnosis of ordinary rickets until the usual vitamin D therapy has been carried out for some time and it is recognized that the abnormal values persist. The exclusion of diseases of the kidney, liver, pancreas and intestines, all of which may produce a similar roentgenologic picture, can be made by proper clinical and laboratory investigation. Renal rickets^{1,2} is accompanied by elevated blood levels of nitrogenous products and phosphorus. The findings of chronic acidosis are invariably present. Albuminuria, low specific gravity of the urine and sometimes cells and casts are the usual findings in this condition. Pancreatic and hepatic insufficiency are usually self-evident from clinical observation alone and need not cause confusion. The same is true of intestinal abnormalities as in the celiac syndrome.

In atypical chondrodystrophy true rachitic

changes at the epiphyseal-metaphyseal junctions are absent. The osteoporosis is minimal or absent and the normal blood chemistry should suffice to identify this condition. Nevertheless, it should be pointed out that this was probably the most common mistaken diagnosis made in our hospital and in other clinics until the true nature of the disorder was elucidated.

Rarely osteogenesis imperfecta may be confused with vitamin D resistant rickets. Careful study of roentgenograms and blood chemistry studies in osteogenesis imperfecta (normal values are found for calcium, phosphorus and phosphatase) should establish the correct diagnosis.

Primary hyperparathyroidism is rare in infancy and childhood but may occasionally offer difficulty in differential diagnosis in adolescence. Recognition of cystic areas in bone, hypercalcemia and hypercalcinuria are most valuable in making the diagnosis. A low serum phosphorus and elevated serum alkaline phosphatase are present in both this condition and refractory rickets.

The therapy of refractory rickets is not as simple as one might suspect from the foregoing discussion. Two factors complicate effective treatment. One is to find the effective dose of vitamin D, which may be from 50,000 to over 500,000 units daily. The other is that the use of large doses of the vitamin is not without hazard.

The ideal method of estimating the proper dosage is to carry out balance studies while the patient is on varying amounts of the vitamin. This, however, requires prolonged hospitalization and a laboratory to carry out the determinations. The most practical method at present would appear to be as follows: the patient is begun on 50,000 units of vitamin D daily for a period of three to four weeks with careful observation for the toxic symptoms of hypervitaminosis which will be outlined. Roentgenologic studies of the ends of the long bones are then obtained to evaluate the presence or absence of healing (Fig. 2B). If healing is taking place, the same dose is continued. If no evidence of healing appears, the dose is increased another 50,000 units daily for three weeks and roentgenologic observations are repeated. In this way, over a sufficient period of time, the correct amount of the therapeutic agent can be ascertained.

During therapy the urine should be examined twice weekly. This examination should consist of specific gravity determinations, microscopic

analysis and the reaction with Sulkowitch's reagent. A consistently low specific gravity is a danger sign of toxicity and is often accompanied by the signs of polyuria. The appearance of granular casts which stain with silver nitrate (calcium casts) indicates that treatment should be temporarily discontinued. The reaction with Sulkowitch's reagent (equal volumes of urine and a solution made up as follows: oxalic acid 2.5 grams, ammonium oxalate 2.5 grams, glacial acetic acid 5.0 c.c. and distilled water q. s. ad 150 c.c.) should normally show a faint cloudiness.¹ When the test shows a heavy milky density, it indicates marked hypercalcinuria and indicates hypervitaminosis of a dangerous degree. Occasional determinations of blood calcium, phosphorus and phosphatase should be carried out. A calcium level above 11 mg. per cent requires reduction of the vitamin dose. With healing the phosphatase level will become lower and may attain normal levels when complete healing has occurred. The phosphorus level will remain low.

When healing is complete, or nearly so, the vitamin D may be reduced to about one-half the initial effective amount. The patient should continue under close observation during this period also. The actual duration of therapy with the high initial dose may vary from over a year to less than six months. Maintenance therapy must continue until bone growth ceases and it may be necessary in some cases to continue treatment into adult life to prevent osteomalacia. In some children the disorder stops at puberty, and it was observed in one of our cases that at this time blood chemistry findings became relatively normal.

The toxic symptoms of overdosage with vitamin D are often insidious in onset, and all of these patients deserve careful observation as outlined above. It has become apparent to us that the difference between a toxic dose and a curative dose is not very great. Beginning toxicity is most frequently manifested by anorexia, and this is soon followed by nausea, vomiting and occasionally abdominal discomfort or pain. An increased intake of water and polyuria may result and is reflected in a low urinary specific gravity. Late and dangerous signs of hypervitaminosis D are uremia and metastatic calcification of the soft tissues, especially the kidneys. Most of these changes are reversible if recognized soon enough and their prevention is dependent upon close observation.

Only after the rickets has completely healed should orthopedic procedures be carried out. If the subject is young the deformities may in some measure correct themselves. One should also be cognizant of the fact that immobilization, as after an operation or while wearing a cast, will result in reduction of the required amount of vitamin D. During these times it is especially necessary to follow the patient carefully to avoid hypervitaminosis and resulting toxicity on one hand, and to prevent relapse of the rickets through too drastic a reduction of the vitamin on the other hand.

Summary

Refractory or vitamin D resistant rickets is an uncommon but not extremely rare metabolic disorder in children. It is characterized by progressive rachitic deformities at an age when ordinary rickets has healed or is healing. It is usually on the basis of roentgenographic signs that rickets is first considered as the probable diagnosis. Physicians who are unaware of this type of late rickets are apt to disregard the roentgenologic diagnosis because of the age of the subject and frequently the history of what would ordinarily be considered an adequate intake of vitamin D. Consequently many of these children are subjected to expensive and prolonged surgical procedures which are bound to be ill-fated because of the active rachitic process.

The importance of recognizing this entity is stressed and the method for proper treatment is carefully outlined. The importance of close observation of the patient throughout the entire growing period is emphasized, and the dangers of vitamin D intoxication are discussed in connection with proper therapy.

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Histoplasmin and Old Tuberculin Reactors in Kent County, Michigan

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Grand Rapids, Michigan

GROWING interest in the geographical distribution of positive histoplasmin skin tests lends importance to the findings in any particular section. Kelly and Woodruff, using 0.1 ml. of 1:1000 dilution of histoplasmin, found 11.5 per cent positive reactors among 471 sanatorium patients in the Detroit area. Dickey and Clark, using the same dilution, found 11.5 per cent positive reactors among 381 students who were life-time residents of Wisconsin. The County Tuberculosis Clinic staff undertook the following study to estimate the percentage of tuberculin and histoplasmin reactors in Kent County, Michigan.

Beginning April 1, 1950, and continuing to September 1, 1950, each person making his first visit to the County Tuberculosis Clinic was given old tuberculin 0.1 mg. intradermally in the volar surface of the left forearm. Histoplasmin, 0.1 ml., was similarly given in the corresponding surface of the right arm. The materials were obtained through the Western Michigan Branch of the Michigan Department of Health Laboratories; the histoplasmin originated in the laboratory of Dr. Arden Howell, Jr., United States Public Health Service, Division of Tuberculosis. Both skin tests were read in the usual manner after forty-eight to seventy-two hours, an area of induration 0.5 cm. or more in diameter was interpreted as positive. Those individuals above the age of twelve years were routinely given stereo 4 x 5 photofluorograms of the chest on the first visit. Children under twelve years of age were not x-rayed unless the tuberculin and/or histoplasmin were positive. The chest films were interpreted independently by two members of the Sunshine Sanatorium medical staff. The recorded interpretations were accepted by the two.

One thousand forty-three consecutive persons making their initial clinic visit were so examined. Ages ranged from nine months to eighty-seven years (Fig. 1). The percentage of positive and negative old tuberculin reactors cannot be accepted as accurately representing the general popula-

tion of the community, since the group contains a disproportionately high number of known tuberculosis contacts. Thirty-seven per cent of the

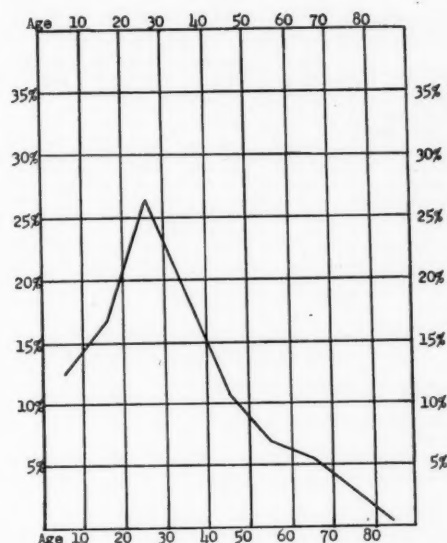


Fig. 1. Age groups attending clinic.

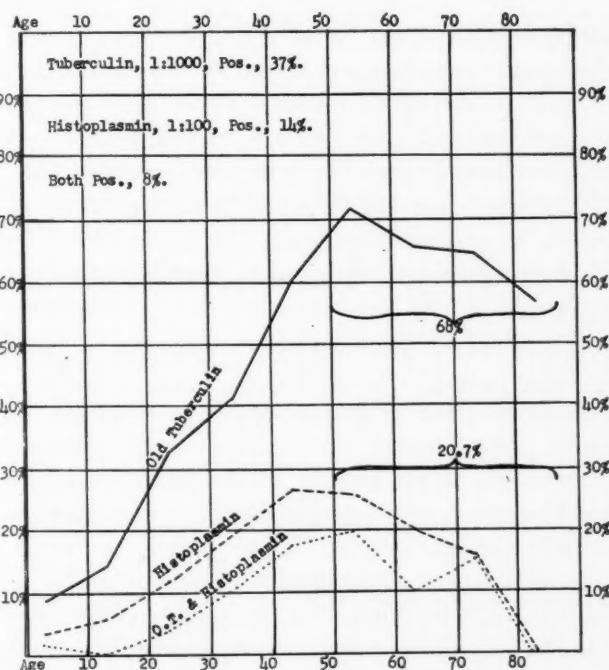


Fig. 2. 1,043 consecutive tuberculin and histoplasmin tests.

1,043 people examined reacted to tuberculin (Fig. 2). Fourteen per cent reacted to histoplasmin. Eight per cent were positive to both. Twenty-nine per cent were tuberculin positive, histoplasmin negative. Six per cent were tuberculin negative and histoplasmin positive. Fifty-seven per cent were negative to both.

X-ray findings, correlated with the skin test

HISTOPLASMIN AND OLD TUBERCULIN REACTORS—IRELAND

TABLE I. X-RAY FINDINGS IN RELATION TO SKIN TESTS.

X-ray Interpretation	Skin Tests with Tuberculin and Histoplasmin				Total
	T Neg. H Neg.	T Pos. H Pos.	T Pos. H Neg.	T Neg. H Pos.	
No x-ray	131				131
Clear	312(30%)	19(1.8%)	133(12.7%)	24(2.3%)	488
Hilar calcium	88(8.4%)	21(2%)	62(6%)	16(1.5%)	187
Hilar adenopathy	1*	1	3***	1	6
Parenchymal calcium	2	4	0	0	6
Parenchymal and hilar calcium	16(1.5%)	17(1.6%)	39(3.7%)	10(0.9%)	82
Parenchymal scar	19(1.8%)	13(1.2%)	39(3.7%)	11(1%)	82
Chronic pneumonitis, probable bronchiectasis	8	0	4	0	12
Acute pneumonitis	5	3	6	1	15
Pleural scar	6	3	7	0	16
Cardiac	2	0	2	0	4
Pulmonary tuberculosis, active	0	3	4	0	7
Tumor mass	2	0	1	0	3
Miscellaneous	3**	0	1****	0	4
Total	595(57%)	84(8%)	301(28.8%)	63(6.2%)	1,043

*Boeck's sarcoid
**2 Spontaneous pneumothorax
1 Pleural effusion
***1 Hodgkins disease
****Diaphragmatic hernia

results, are summarized in Table I. It is interesting to note that eighty-eight (8.4 per cent) individuals reacting to neither antigen in the dosage given showed hilar calcium deposits. Care was taken not to record blood vessel shadows as representing hilar or parenchymal calcifications. Sixteen (1.5 per cent) reacting to neither antigen showed both parenchymal and hilar deposits. Two x-rays showed parenchymal calcifications only. No attempt was made to count or measure the extent of calcium deposition. However, we were of the impression that both parenchymal and hilar calcification was more extensive in those reacting to histoplasmin only, as compared to those reacting only to tuberculin.

Definite hilar lymphadenopathy was noted six times. Three cases were clearly active primary tuberculosis. One proved to be Boeck's sarcoid, one Hodgkin's disease, and one failed to return for complete study.

Evidence of parenchymal fibrosis was noted in eighty-two individuals. An additional twelve were reported as chronic pneumonitis (probably on a bronchiectatic basis). Seven other cases proved to be active reinfection tuberculosis and are listed separately. Nineteen (1.8 per cent) of the eighty-two individuals did not react to either antigen. Thirty-nine (3.7 per cent) of the eighty-two were tuberculin positive, histoplasmin negative.

Evidence of acute pneumonitis was noted fifteen times. Four cases were histoplasmin positive. These were referred back to their private physicians and complete clinical information is not available.

During the first two months of study the patients were asked in what other states and countries they had resided. It was soon evident that these records would have little significance. Of the first 350 so queried, 34 per cent reported having lived in two or more states other than Michigan. An additional 40 per cent reported having lived in one other state, Canada (five) or Europe (sixteen). Twenty-six states were named. The midwestern states predominated, although California, Washington, Utah, Mississippi and Florida were included. Twenty-five per cent stated they had always lived in Michigan. However, it was clear that the majority had spent weeks of vacations in other sections of the country. It was noted that 13 per cent of the histoplasmin-positive individuals reported continuous residence in Michigan, as opposed to 31 per cent of the histoplasmin-negative group. Two of four histoplasmin-positive children under the age of ten years had definitely not been outside of Michigan. It was fairly certain that six of eleven histoplasmin reactors between ten and twenty years and two of twenty-nine between twenty and thirty years had not been outside the state.

Summary

Of one thousand forty-three consecutive persons making their initial tuberculosis clinic visits, 57 per cent were negative to both old tuberculin and histoplasmin, 37 per cent reacted with tuberculin and 14 per cent with histoplasmin. The skin test results were correlated with x-ray findings. It is certain that some of the positive histoplasmin reactors had never been outside the State of Michigan.

Acknowledgment

I am indebted to Drs. Pearl Kendrick and Grace Eldering of the Michigan Public Health Laboratories for their criticisms and suggestions.

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Sunshine Sanatorium

Report of the Committee on Maternal Deaths

Illustrative Case Report

The patient was a white woman, aged 30, Gravida 2, Para 1.

Medical and surgical history were irrelevant excepting for chronic bronchial asthma. Prenatal care commenced during the second month of pregnancy, with sixteen prenatal visits to her physician.

There was a gain of 23 pounds with maximum weight 138 pounds. Blood pressure was normal. Urine and blood examinations were negative. Blood type O Rh positive. No complications were reported during pregnancy.

X-ray findings at term were interpreted by the roentgenologist to be normal.

The first stage of labor lasted seven hours with complete dilatation. The patient was delivered by outlet forceps. Some cyanosis was observed during the first stage of labor. There was moderate to excessive postpartum hemorrhage. Episiotomy was repaired under drip ether administered by the nurse.

During the first stage of labor, 100 mg. Demerol was administered hypodermatically.

Ergotrate Gr. 1/300 given with delivery of shoulders; 1 c.c. pituitrin immediately after third stage; 200 c.c. whole blood after delivery. Oxygen was administered.

Symptoms of pulmonary embolism appeared immediately after delivery. Sterile vaginal examination was made to rule out fundus or cervical laceration.

A living child was delivered weighing 6 pounds eleven ounces.

Cyanosis continued.

Attending Physician's Summary

The following is a résumé of the labor, delivery and post-partum course of this patient.

She was admitted in active labor and was seen by me immediately after admission. Her labor was rapid with fairly hard contractions. Demerol was given shortly after admission. During her entire labor she was markedly agitated, requiring attention throughout. During this time she appeared somewhat cyanotic which I attributed to her intense straining at all times. When she was completely dilated, she was taken to the delivery room and prepared for delivery. I had anticipated a spinal anesthetic, but because of her complete lack of co-operation, this was impossible. Drip ether anesthesia was given and was taken very poorly. Because of the poor response to the anesthetic, I quickly did an episiotomy and forceps outlet delivery while she was still straining somewhat. Immediately after the delivery the anesthetic was stopped, episiotomy repaired and by the time the repair was finished, she was awake. The placenta delivered spontaneously in six minutes, followed by moderately excessive bleeding which was controlled by massage of the fundus and Pituitrin intramuscularly. At this time her pulse was 120, but of good quality, but it was noted that she was quite cyanotic. The estimated amount of bleeding was about 300 c.c. She was returned to her room and visited with her husband for five or ten minutes. During this time, I had gone directly to the other

delivery room. In about ten minutes I was notified that her pulse was almost imperceptible and she was extremely cyanotic. She was seen by Dr.—?— who administered Neosynephrine and started intravenous plasma. About ten or fifteen minutes later, when I was free, I went to her room: Her condition was very poor. She was complaining of a terrific pressure in her chest and marked air hunger. She was very cyanotic and extremely agitated, enough so that it required two nurses to keep her quiet in bed. Oxygen was started, plasma continued. During the next half hour there was again moderately excessive bleeding due to relaxation of the fundus which was controlled by massage. Her condition progressed rapidly and she died in about forty-five minutes with considerable frothy mucus from her mouth five minutes prior to her death.

About five or ten minutes before she died, I considered the possibility of a ruptured uterus and did a sterile vaginal examination and found no laceration in any portion of the uterus which was felt throughout.

My diagnosis as to death was *pulmonary embolism*; the cardinal findings of which were marked cyanosis, pressure discomfort in chest and air hunger, marked restlessness, no response to plasma or blood—in fact, I believe she became somewhat worse with this therapy.

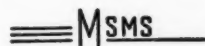
The question also arises of two other possibilities:

1. *Shock from bleeding.* I believe this can be ruled out from the fact that although bleeding was moderately excessive, it was in no way enough to cause death and instead of the usual pallor and listlessness caused by bleeding, she was markedly cyanotic and restless.

2. *Pituitrin shock* was possible, particularly with the past history of asthma and possibly cannot be completely ruled out.

Rupture of the uterus was ruled out by direct digital examination.

Comment by Reviewing Committee.—Non-preventable maternal death, cause not definitely indicated but presumably an embolic phenomenon, either pulmonary or cerebral.



The frequency of discovery of lymphatic metastasis is almost directly proportional to the inquisitiveness and patience of the pathologist.

* * *

Anyone, particularly a man over forty, who notices any hoarseness or other throat discomfort lasting more than two weeks should immediately undergo a thorough laryngeal examination.

* * *

Until laryngeal mirror examination, laryngoscopy, and biopsy of all abnormal growths found have been performed, a diagnosis of nonmalignant disease is unjustified.

* * *

To classify carcinoma of the skin as a "relatively" non-dangerous disease, on the basis of comparison with other and more deadly forms of cancer may be to throw away a patient's life.

Detroit Physiological Society

MEETING OF MARCH 15, 1951

Chemical Topography of the Human Heart in Circulatory Failure and After Digitalization

NORMAN E. CLARKE and ROBERT E. MOSHER

*The Department of Research, Providence
Hospital, Detroit*

This study of the chemical topography of the human heart demonstrated that changes occur in the elemental composition of the myocardial tissue in circulatory heart failure, also in serious metabolic disorders which involve disturbances in electrolyte balance. The particular components studied were sodium, potassium, chloride and water. Forty human hearts were analyzed, of which seven were classified as normal, eleven cardiacs and five digitalized cardiacs. The cardiac group included only patients dying from clinically diagnosed circulatory heart failure. Samples of heart tissue were taken from the right auricle, right ventricle, ventricular septum, base and apex of the left ventricle. All complicating conditions or diseases were eliminated.

The muscle water content was determined by an official method of electric oven-air drying, sodium and potassium by wet-washing and the Beckman Flame Photometer, and chloride by conventional Volhard titration. Because of variation in water content, the concentrations of elements was on a dry tissue basis.

In the normal heart the water content is greatest in the right auricle and least in the left ventricle. The same was found for sodium, potassium and chloride content. The right ventricle composition is intermediate between the auricle and left ventricle. In normal hearts, sodium and chloride are higher and potassium lower in the auricle and right ventricle than in the left ventricle, a condition not present in cardiacs and digitalized cardiacs where the sodium and chloride content of the right ventricle equals or is slightly lower than in the left ventricle. Cardiacs have a higher sodium and lower potassium than normal which was found in all

sections, while digitalized cardiacs hold an intermediate position.

The ratio of potassium to sodium is a sensitive and reliable index of the alkali metal balance in a heart. The ratio increases from the right auricle to right ventricle, to left ventricle. K/Na ratios for normals may be twice as large as for cardiacs. In the pathological heart that has been digitalized, the K/Na ratios are intermediate between the normal and undigitalized cardiac. The total number of milliequivalents of alkali metals in 100 g. of dry heart tissue is essentially the same for normals and cardiacs in contrast to the great change in K/Na ratios. The total number of equivalents of alkali metals increases from the right auricle to right ventricle and to left ventricle. The chloride content of the left ventricle in cardiacs is noticeably higher than that of normals, while the right auricle and right ventricle remain essentially unchanged.

The ratios of K/Na in pathological hearts cover a wide range and may be taken as evidence that the mechanism for controlling the electrolyte balance is influenced by several body reactions and does not exercise rigid control.

Other pathological conditions which influence electrolyte balance result in either abnormally low or abnormally high ratios of K/Na in the heart muscle, at times appearing sufficient to be a prime cause of death. The digitalized heart stands intermediate to the normal and the undigitalized heart of circulatory failure. Perhaps digitalis influences the heart cell surface so as to alter intra-extra cellular exchange of substances such as electrolytes.

Experiments on the Transplantation of Aortic Valves

HARTLEY H. ARAM, EDWARD R. MUNNELL and
CONRAD R. LAM

Henry Ford Hospital

These experiments were carried out to determine whether it is possible to transplant a functioning aortic valve into the descending aorta of a recipient animal. A short segment of the ascending arch containing the semilunar valves

was removed from the donar animal, and the coronary arteries were ligated. The segment was then grafted into the thoracic aorta of the second animal, immediately distal to the subclavian artery. To prevent paralysis from occlusion of the aorta during the suturing, the minimal interruption method of Hufnagel using a lucite tube was employed. In a preliminary series, eight dogs survived the operation. When examined later at intervals of from one to two months, in only one instance did it appear that the valve had any function. The leaflets had become shriveled or clots had formed in the sinuses of Valsalva.

In a second series, insufficiency in the animal's own aortic valve was produced with a valvulotome inserted through the ventricle, after the valve graft was inserted. Pressure tracings with the Hathaway impedance gauge apparatus showed insufficiency proximal to the graft and the picture of sufficiency distally. The animals were sacrificed at intervals of from one to twelve months. Attempts to prove valve function with the pressure recording apparatus were inconclusive, and the valves would not hold water. However, eight out of seventeen animals showed valve leaflets which approximated the normal grossly, and which were undoubtedly capable of some function.

Nutritional Aspects of Growth Control in Tissue Culture

J. J. WORZNIAK

Wyandotte, Michigan

From the tremendous amount of research devoted to the problem of neoplasia, it is apparent that the number one problem of biology today is "Control of Growth." The uniqueness of the tissue culture method for elucidating the factors involved in normal, organized or organotypic growth of the explant as opposed to the "free" migratory, unorganized, or histiotypic growth issuing from it is discussed.

The problems of initiating and maintaining this "free" type of growth is one of distorting the mechanisms responsible for the development of the specific chemical linkages that constitute organized growth, and may conceivably consist only of failure to supply metabolites for the development of these specific chemical linkages.

By using plain Tyrodes solution as an incomplete nutrient with the roller tube method of tissue culture the growth effects of various metabolites were tested.

It was demonstrated that the sulfhydryl amino acids were powerful proliferation-stimulating substances both for the "free" as well as the organized types of growth.

Through their action, the complex embryo extract previously used for this purpose could be eliminated. Glucose and some intermediaries were found to be essential for the structural integrity of the explant as well as for proliferation of epithelium. Methyl glyoxal exerted a differential action on growth, causing absolute suppression of fibroblasts while allowing growth of epithelium, from bowel, lung, and liver explants. Liver epithelium, a traditionally difficult tissue, grew well in Tyrodes with glucose and sulfhydryl. But when glutamic acid was added a fibrous capsule grew, enveloped the epithelium, and suppressed further proliferation.

Cortisone was shown to be the "organized growth" factor without parallel. Muscle explants without cortisone appeared amorphous. With cortisone definite membranous and cartilaginous types of organization occurred.

It is suggested that only when we determine the metabolic and nutritive differences between organized and "free" or neoplastic growth, will we be able to employ metabolic antagonists rationally and successfully in the control of neoplasia. The present method is a good approach to the problem.

MEETING OF APRIL 19, 1951

The Application of Heat and Cold in Traumatic Injuries

SIMON BENSON

Wayne University

Traumatic injuries are here defined as strains and sprains, internal lesions resulting from torn muscular, vascular, and/or connective tissues (ligaments), and usually, but not always, accompanied by marked swelling. Perhaps it is worth noting here that, contrary to popular opinion, the size of the swelling is not necessarily proportionate to

the severity of the injury, as far as recovery period is concerned. Torn vascular tissue swells readily, but heals rapidly; torn ligaments, on the other hand, cause little swelling, but heal slowly.

Now, as to the most effective therapy for this type of injury, opinions and practices vary greatly, except perhaps that the injured part should be subjected to temperature changes, cold or heat: cold, generally by means of cold water or ice packs, to retard or reduce swelling; heat by means of hot water, hot air, radiant heat, or diathermy, to promote healing. This raises some questions: Which should it be, heat or cold? If heat, which "form"? Is one more effective than another? And equally, if not more important, how much of each? That is, what *dosage*? The effect of heat and cold, especially the latter, varies greatly according to dosage. Brief cold stimulates; prolonged cold depresses. Cold applications varying from a few minutes to twelve hours can consequently not produce the same effects. Furthermore, in a prolonged series of measurements, we found that cold water, down as far as 2° C., produced an increase, not a decrease, in the foot and leg volume; and the effect of heat applications, as measured by increased motility of an injured joint, was roughly as follows: hot air gave an increase of 14 degrees per treatment; hot water (whirlpool), 10°; diathermy, 1.5°, the latter with a light dosage. High dosages produced pain and decrease of motion.

The Effect of Chondroitin Sulfate on the Proteolytic Action of Pepsin

SARAH SHEINFELD and STANLEY LEVEY
Wayne University College of Medicine

Chondroitin sulfate is of interest physiologically since it occurs in large amounts in cartilage probably bound to the protein collagen. In the present study the action of various enzymes on chondroitin sulfate was studied. The following enzymes showed no action as measured by changes in the viscosities of solutions of chondroitin sulfate: crystalline pepsin, trypsin, chymotrypsin, purified hyaluronidase, lysozyme, pectinase, and amylase. On the other hand, it was found that chondroitin sulfate would markedly inhibit the proteolytic activity of pepsin but not chymotrypsin or trypsin. Measurements of the casein-di-

gesting power of pepsin were made by two methods, the first being the liberation of amino acid nitrogen using the copper method of Albanese and the second being the estimation of tyrosine being freed. Inhibition of pepsin occurred at pH 1.6, 2.5 and 3.5 with the greatest inhibition of activity occurring at the lowest pH.

Using the methods developed by Shay for producing ulcers in rats by tying off the pyloric end of the stomach, it was found that chondroitin sulfate would inhibit the formation of ulcers in these animals. The chondroitin sulfate was administered at a level of 25 mg. per animal immediately after the stomach was ligated. The present work indicates that chondroitin sulfate will inhibit the action of pepsin both *in vitro* and *in vivo*.

CLINICAL APPLICATION OF ADRENERGIC BLOCKADE IN SYMPATHETIC PREDOMINANCE

(Continued from Page 596)

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A swelling in the anterior midline of the neck superior to the thyroid gland is usually a thyroglossal duct cyst or fistula and uncommonly a dermoid cyst. A mass in the lateral area along the anterior border of the sternomastoid muscle is often a branchial cyst or fistula.

* * *

Palpation with one finger inside the mouth is often helpful in differentiating swellings in the floor of the mouth.

* * *

Multiple masses in the neck first suggest lymph node enlargement. Single masses should cause one to think first of congenital abnormality or primary neoplasm.

* * *

In the great majority of cases of cancer of the intrinsic larynx there is but one early symptom: hoarseness.

Bon Secours Hospital Clinic Day

June 5, 1951

MULTIPLE POLYPOSIS

J. F. WENZEL, M.D.

Multiple polyposis of the colon is thought to be an inherited disease, usually occurring in young adult males. While children are not born with the disease, they inherit the susceptibility of the epithelial cells to proliferate at puberty or in early adult life. The most common sites of these growths are the rectum and sigmoid although the entire large bowel is frequently involved.

Four cases of surgical extirpation of the large bowel for multiple polyposis are presented. In one case ileostomy and colectomy were performed in one stage and followed by a Miles' type abdominalperineal resection of an involved rectum. In the other three cases low ileosigmoidostomy combined with colectomy were done in one stage. Periodic check examinations are vital in the three with retained rectums. There was no mortality. Nutrition has remained good in all four individuals.

HIATUS HERNIA

L. E. HEAVNER, M.D.

The clinical aspects of esophageal hiatus hernia are reviewed with emphasis placed on evaluation in co-existing cardiovascular disease and associated findings in the upper gastrointestinal tract. Hasty conclusions based on anginal radiation of pain may do the patient an injustice.

Theories and experimental evidence of esophageal shortening are reviewed.

Roentgenographic illustrations of several cases are presented.

PROLAPSE OF GASTRIC MUCOSA

R. J. REICHLING, M.D.

Definition: Prolapse of gastric mucosa is a redundancy and relaxation of the mucous membrane in the pyloric region of the stomach with the redundant mucosa passing through the pyloric ring and entering the duodenum.

Synopses of papers presented at the Annual Clinic Day of Bon Secours Hospital, Grosse Pointe, Michigan, June 5, 1951.

Etiology:

1. Local hypertrophy of gastric mucosa following low grade inflammation.
2. Narrowing of pyloric musculature.
3. Hypertrophy of pyloric musculature.

Symptoms:

1. Vague epigastric distress.
2. Severe episodic pain between meals.
3. Vomiting.
4. Melena and or Hematemesis.
5. Weight loss.

Physical Findings:

1. Palpable mass in some cases.
2. Epigastric tenderness.

Diagnosis: Always by x-ray.

A case of prolapse of gastric mucosa is presented with surgical treatment.

ADRENAL INSUFFICIENCY

N. W. DIEBEL, M.D.

The state of adrenal cortical insufficiency is more prevalent than is usually realized. Many borderline cases are not recognized until the adrenal cortex is placed under conditions of stress; i.e., surgery, accidents, burns, or infection. At such times heroic and expensive treatment for the patient is the result. Needless fatalities unfortunately will result from diagnostic failures. Improved accuracy of tests for Cortical Insufficiencies are now in use, and simplified to such an extent that they may be performed as office procedures. Maintenance therapy can efficiently be maintained with diet, salt, and the synthetic extracts, with supplementation therapy during periods of stress.

SYMPATHECTOMY IN ARTERIO-SCLEROSIS

D. N. SWEENEY, M.D.

Individuals suffering from arteriosclerosis obliterans have until recently been denied the beneficial effects obtained by elimination of sympathetic tone. It can be shown that many extremities are salvaged.

Selection of the patient both for prophylactic

and therapeutic surgery is important and indications for and contraindications to sympathectomy in this group is discussed.

CERVICOBRACHIALGIA

G. R. GRANGER, M.D.

Differential diagnosis of and therapy for neck-shoulder-arm pain may be facilitated by the application of a few neurological principles together with radiographic interpretation of existing cervical spine pathology.

Familiarity with cervical dermatomes and deep tendon reflex pathways greatly increases accurate localization of neurovascular or focal neurospinal disorders.

Special emphasis is given to discogenic radiculitis and hypertrophic osteoarthropathy as possible etiological factors in cervical nerve-compression-syndrome.

Interpretation of spinal fluid chemistry and hydrodynamics concomitant with cervical myelography is indicated in intractable cases.

Diagnostic Sayre traction, paravertebral sympathetic block, or deep radiation is often therapeutic in effect.

Surgical measures are outlined.

THE ANAL GLAND

R. M. BURKE, M.D.

This paper is a discussion of the epithelial lined ducts of simple or complex type which have been demonstrated in the various anal quadrants in surgical and necropsy material. These ducts are shown to be of varying length, direction, and number, and exhibit pathological change not infrequently. The significance of inflammatory processes in and about these tubules is considered in relation to the origin and spread of infections of the perianal and perirectal spaces. The occasional presence of gland-like components of these structures and the extremely rare involvement of them in tumor formation is discussed. Diagrammatic and photographic slides serve to illustrate the paper.

CEREBRAL ANGIOSPASM

R. L. FISHER, M.D.

Though still questioned physiologically, cerebral angiospasm would appear to be a clinical entity. The syndrome is confused with organic etiologies, cerebral dysrhythmias, and metabolic

disturbances. The mooted question of its *de facto* existence and the difficulty of objective criteria of proof place diagnosis and therapeutics on an empiric plane. Cases have been cited to suggest that sodium diphenyl hydantoinate (dilantin R) induces remission of symptoms.

EARLY AMBULATION

E. J. TAMBLYN, M.D.

1. Physiological principles involved
2. Choice of anesthetic
3. Choice of incision
4. Suturing
5. Type of suture
6. Contraindications

INTUSSUSCEPTION

E. F. LANG, M.D.

Of the cases of this form of incarcerating obstruction which come to operation, the great majority are in young infants, occur almost invariably without demonstrable cause, and are without recurrence. These factors admit the feasibility of non-operative reduction in selected cases. In adults there is almost always an evident precipitating cause, most frequently an intestinal tumor.

Recent roentgenographic evidence indicates that acute recurring intussusception with spontaneous reduction is more frequent than generally believed, in both children and adults. This form may be only mildly symptomatic.

BRIEF SUMMARY OF CLINICAL PHYSIOLOGY OF POTASSIUM

HUGH STALKER, M.D.

Potassium is found in both intracellular and extracellular fluids and is twenty-three times as concentrated in the former. Laboratory evaluation of the body potassium is that of the serum potassium. Many physiological factors tend to increase and decrease serum potassium concentration. The equilibrium between extracellular and intracellular potassium is constantly being interfered with by many factors.

The cardiac observations, as noted by electrocardiography, are generally the only significant ones, as symptoms of hyperpotassemia chiefly involve the heart. In several respects the opposite of these electrocardiographic findings are noted

with low serum potassium concentration. Variations in body potassium must be watched in diabetes, acidosis, infantile diarrhea, surgical conditions, paresthesias of the extremities, flaccid paralysis and uremia.

CONGENITAL POLYCYSTIC DISEASE OF THE KIDNEYS

I. G. DOWNER, M.D.

Polycystic disease of the kidneys is a congenital one which has been described for many years. Its etiology is not completely understood, although it is definitely of a congenital nature. The early symptoms are those of chronic nephritis and later that of tumor, pain, hematuria and eventually renal failure.

Diagnosis is made by clinical symptoms, unilateral or bilateral tumors of the renal regions and x-rays.

Treatment: Most cases should be treated medically, but where there is evidence of multiple large cysts, the operation of drainage of the cysts may change the entire picture from one of extremis to that of complete symptomatic recovery for years.

Five cases are reported. Two of these have been essentially asymptomatic for five and eight years following surgical drainage of the cysts.

VENTRICULAR TACHYCARDIA

H. A. KLEIN, M.D.

Ventricular tachycardia is a serious disorder of cardiac rhythm. It occurs predominantly in patients with severe organic heart disease and rarely in the absence of cardiac pathology. The common theory is that the rapid ventricular rate is related to ischemic foci in the ventricular musculature. Since diastolic filling is greatly reduced by the tachycardia, there is a consequent decrease in cardiac output. At times the cardiac output may be reduced sufficiently to produce cardiac failure, angina pectoris, vertigo, or syncope.

The necessity for early recognition and treatment of this condition is most important in order that further cardiac damage, shock, or abnormalities of rhythm, such as ventricular flutter and fibrillation are not produced. Clinical differentiation from other tachycardias depends upon the presence of a changing intensity of the first heart sound at the apex, slight irregularity of the ven-

tricular cycle length, and the lack of response to vagal stimulation. The electrocardiographic diagnosis is the most accurate method available at the present time. Exact diagnosis is imperative since quinidine is the drug of choice and digitalis is definitely contraindicated.

DIVERTICULA OF THE STOMACH AND DUODENUM

H. M. FULLER, M.D.

Diverticula of the alimentary canal occur in variously reported frequencies. Symptom producing diverticula of the stomach and duodenum can only be positively diagnosed roentgenographically. The roentgen incidence is about 0.4 per cent for stomach and about 2 per cent for the duodenum.

Surgical treatment of these defects is relatively uncommon because of the failure to correlate the symptoms with the findings; the presence of co-existing lesions such as cholelithiasis, peptic ulcer, etc.; the technical difficulty in locating the lesions at operation; and the fear of possible fistula following an elective operation.

Two cases are presented with lantern slides showing preoperative and postoperative roentgen findings and demonstration of diverticulum at operation. One case is that of a large symptom-producing diverticulum of the cardiac end of the stomach. The other case is a large symptom-producing diverticulum of the third portion of the duodenum.

These diverticula should be treated surgically and can be so treated with expectation of complete relief of symptoms at relatively low risk.

THE SURGICAL TREATMENT OF DEAFNESS

J. E. COYLE, M.D.

The various types of deafness are discussed, with emphasis placed upon etiological factors and methods of treatment. Particular reference is made to clinical otosclerosis and the fenestration operation. The indications for the operation are considered, and the ultimate results are tabulated. Kodachrome slides of representative audiograms and the technique of the operation, as well as slides of an actual operation are included in the paper.

(Continued on Page 685)

Leadership and Service

Today we are reminded that men of medicine brought to fruition a plan for medical care in 1939 and 1940. It was conceived as a service to those of moderate incomes. By the plan, physicians were to receive average fees for services rendered those earning \$2,000 per year, if single, and \$2,500 per year, if married. According to surveys at that time, this would have covered 75 to 80 per cent of the people of Michigan.

Due to conditions beyond our control, we encountered rising prices, increased cost of living and inflation. Because of bureaucratic unrestrained deficit spending, the dollar has been devaluated to one-half its normal worth. It is no wonder that employers and unions alike complained that Michigan Medical Service plan was serving only a small percentage of those it originally intended to benefit.

In 1946 and 1947 the dissatisfaction began to express itself in a very tangible form. Many groups of subscribers cancelled their policies.

Over the next four years an extensive study was made; a new fee schedule and contract were finally approved by the House of Delegates of the Michigan State Medical Society in 1950. Again about 80 per cent of the people of Michigan would be covered. In November, 1950, this new plan, covering a subscriber earning \$3,750 per year, if single, and \$5,000 per year, if married, was announced. How well the profession accepted it can be ascertained by the fact that sixty-one physicians added their names to the thousands of participants and only ten dropped out.

Now where do we stand? Will this fee schedule and contract continue to satisfy? Not for long, if wages and cost of living continue to spiral and inflation remains unchecked. Every few days we hear the national budget has been increased and a new tax is being developed in the Washingtonian Institute of Delirium. Our Board of Directors of Michigan Medical Service will soon be getting orders to stand by for consideration of another increase in premium rates. The House of Delegates will be told that in order to compensate for a twenty-five cent dollar, the income limits must be increased to \$10,000 and \$7,500, respectively, if we wish to continue to cover 75 to 80 per cent of the people. Where does it end? That is the immediate and pressing

problem. We must stop this nonsensical bureaucratic spending which causes inflation. We have our CAP, Woman's Auxilliary, Speakers' Bureau, liaison with press, radio and television, so what are we waiting for? Our influence with our friends and patients remains as great today as it ever was. **This country needs real leadership.**

Once these devastating inflationary tendencies can be stopped, we can begin our plans for a more complete and available medical care. Many features have been considered. Much thought has been given to home and office coverage with the first two calls deductible. Another plan would be complete medical care with the first twenty-five dollars of service deductible.

A few years ago one of our members proposed a sliding scale of payment, based on the patient's income, in which federal tax funds could be utilized to subsidize the unmet cost for those of low income. There were many inherent dangers recognized in this, the greatest of which is the control which comes with any federal aid. Some type of federal aid plan has been suggested by the unions, because the cost would then be evenly distributed over all the people. In support of this, cases are cited where money made locally is spent outside the state.

We could think of a better approach. The federal tax take could be reduced by at least 50 per cent if budgets in Washington were carefully planned. This would leave funds available for use on the state level under local supervision. Care for the indigent and low income groups could then be financed through Blue Cross and Blue Shield without danger of federal control. Above all else we must maintain human dignity and the freedom of the individual.

As far as this country is concerned the Medical and Hospital Service Plans are our greatest bulwark against Socialism and Communism. It is not a question of whether they will continue to expand and serve the people. They must not fail. And it is the responsibility of every individual Doctor of Medicine to ACT so Blue Cross-Blue Shield do not fail.

President's



Message

C. C. Humphrey M.D.

President, Michigan State Medical Society

Editorial

MICHIGAN STATE MEDICAL SOCIETY ANNUAL SESSION
GRAND RAPIDS—September 26-27-28, 1951

SOLVENT!!!

IS Michigan Medical Service, the Michigan Blue Shield plan, solvent? Several students asked that question of the Editor when he gave one of the series of four lectures, sponsored by the Michigan State Medical Society at each of our two Michigan medical schools, at Ann Arbor, May 8, 1951. These lectures have been given for several years to acquaint the young doctors-to-be with problems not included in the medical curriculum.

The students said the impression had been given them, source: undesignated, that the Blue Cross and Blue Shield are financially embarrassed and might be in serious difficulty trying to render their contractual services. It had been intimated that doctors were undermining the resources of their own brain-child by ordering for their patients with hospitalization and medical insurance many unnecessary or needlessly expensive services or medication, merely because they could be obtained. The students were worried. We told them it is true some abuses are apparent, but we have been trying to keep them at a minimum. We believe very few doctors are deliberately sabotaging our Service plans. Some may do it unknowingly.

We have faith in our profession. Proof of that faith and its well-merited application is given by what has been accomplished in eleven short years.

Reports in this number of THE JOURNAL prove solvency. Michigan Medical Service started with nothing but a hopeful idea and a promise. It now is serving almost two and a quarter million persons in our state, well over one-third of Michigan's population. It owns an office building in Detroit. It has assets of \$6,479,000 with liability (advance payments, unearned services, and those in the process of payment) under \$4,000,000, leaving a reserve of \$2,560,120. Michigan Medical Service is now paying over \$1,100,000 a month to doctors for services rendered their patients.

Yes, Michigan Medical Service is solvent. And we appreciate we are a great public service agency built by doctors and operated by doctors.

Sabotage our brain-child!—NEVER.

WORKMEN'S PENSIONS AND INDUSTRIAL PHYSICIANS

THROUGH long custom every good industrial physician refrains from extensive medical activities among employes for ailments of non-occupational origin. Properly it has been recognized that the management of any such conditions is a matter between the employe and the private physician of his own choice. Nevertheless the industrial physician has certain responsibilities which he must accept. Through necessity he often faces the duty of recommending rejections of applicants with disqualifying physical defects. The industrial physician is also required by law to remove from company premises workmen with readily communicable diseases and, in addition, most industrial physicians extend emergency care to employes suffering acute episodes of non-occupational illnesses to enable them to finish out the day's work.

Frequently, need arises for industrial physicians to make extensive medical examinations in order to rule out obscure occupational diseases. Apart from such considerations the disposition of the industrial physician always is to direct employes requiring medical care or attention for occupational injuries or diseases to their own private physician. To put it mildly, the industrial physician has no desire to accept responsibility for treatment of such conditions as nephritis, gastric ulceration, pernicious anemia, non-occupational cancer and dysenteries—to mention but a few. By no means does this imply that industry or the industrial physician is lacking in interest in the incidence of such illnesses within its work population of all manner of diseases from tuberculosis

Submitted by Guiding Board of Workmen's Compensation Committee of The Wayne County Medical Society on recommendation of The Council of The Wayne County Medical Society.

EDITORIAL

to cirrhosis. However, it does mean that this well-devised concept of medicine fully recognizes the prerogatives of the private practitioner. As a result an admirable relationship and mutual respect has been built up between private and industrial physicians.

Newer developments, however, may cause some misunderstandings to arise and could threaten to disrupt this relationship. With the advent of retirement pensions for disability, from any cause, every disabling condition becomes more closely identified with employment. While the provisions of pension contracts vary from company to company, substantially they all include the opportunity for retirement, for any type—(total and permanent)—of disability, prior to the standard requirements of age and years of work duration. But since the employer is responsible for paying the pension benefits he must be concerned as to the validity of these claims for total disability. To a certain degree every disease capable of inducing total and permanent disability now has occupational significance, and industry will undoubtedly have a very definite interest in such disabilities if they are expected to pay claims for retirement on this basis. In some instances the plant physician might be called upon to enter the appraising procedure of such claims even though he has no wish to be placed in such a controversial position. It is just at this point that the opportunity may arise for misunderstandings and the disruption of good relations between the private and industrial physicians might be jeopardized.

Under optimal conditions the plant physician should never serve in any capacity except that of strict neutrality between the individual worker, his union and the employer. However, whatever conclusions might be reached by the plant physician in pension retirement appraisal, this nicely balanced neutrality may be questioned. Somebody's displeasure may be aroused. If many such incidents should arise future services of the industrial medical department may become surrounded by suspicion and in particular an unfavorable attitude may be engendered in the mind of the private practitioner who for years may have had under his close observation the very condition leading to the issue of retirement. Still further dissension may arise on the part of the private practitioner if the industrial physician's appraisal of the case takes precedence over the family doctor's recommendations. This situation obviously is not one

of the industrial physician's choice. It is a development of the times. Duly deliberated it might appear laudable that the plant physician be not charged with decisions of this character. As a procedure substitute divers methods have been proffered, salutary alike to the employe, the plant medical department, the private practitioner, the union and the employer.

One plan suggested which should relieve this controversial position between the private physician and the industrial physician to a great degree is as follows: Whenever an employe becomes allegedly totally and permanently disabled from non-occupational causes prior to the regular selected date of retirement he will, of course, have been in such a condition for some time and undoubtedly under the care of his private physician. In most instances such periods of sickness or disability extends for at least six months and any claims for such disability are made through the regular channels of the insurance company handling such claims. If at the end of the six-month period the insurance company should feel that the employe concerned is totally and permanently disabled the claim for pension will undoubtedly be accepted by the employer, but in the event a question arises as to the validity of such claims the final decision might be made through a highly qualified unbiased group, acceptable both to the union and employer, located near the work vicinity of the persons in question. It is evident that no one of these groups can afford to be identified with the employer or the union.

The belief is inescapable that if the impartiality herein reflected is procured in all instances of troublesome decisions involving disability retirement of employes from non-occupational illnesses the present threat of discord between the private practitioner, industrial physician, union, employe and employer will be avoided. In any event, even though the industrial physicians of certain plants should be given the responsibility of reaching such decisions, should there be a difference of opinion between the employe's private physician and the industrial doctor involved, it is hoped that both parties will see fit to use the same discretion, courtesy and good judgment in these cases, usually shown between two consultants when they are called in on a puzzling case.

In other words, it is hoped that the doctors

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With Firm and Regular Step

*"With firm and regular step they wend—they never stop
Successions of men, Americans, a hundred million,
One generation playing its part and passing on,
And another generation playing its part and passing
on in its turn . . ."*

—WALT WHITMAN, *Leaves of Grass*

1

IT HAPPENED on a Thursday evening, in October, 1947. The scene was the living room in the Grand Rapids home of Dr. and Mrs. A. B. Smith. Present, in addition to Dr. and Mrs. Smith, were the late Senator Arthur Vandenberg, Dr. Wilfrid Haughey, Vice President of Michigan Medical Service, Dr. L. Fernald Foster, Secretary of the Michigan State Medical Society, William J. Burns, Executive Director of the Michigan State Medical Society, and Jay C. Ketchum, Executive Vice President of Michigan Medical Service.

The scene followed immediately after dinner. Dr. Smith, a member of the MSMS Council, was family physician to the Vandenberg. The party was arranged because the Senator had expressed his desire to get together with officers of Michigan Medical Service and the Michigan State Medical Society to find out more about Blue Shield and Blue Cross.

Senator Vandenberg's questions had been astute and penetrating. He listened attentively to the answers, only to ask more questions, yet managed to maintain the conversation on a pleasant general level, so that there was no feeling that they were talking shop. In the living room, he suddenly dropped his Socratic role and turned to the men who had come to answer his questions.

"You have done something in Michigan that you didn't know you were doing," he said. "You have established a public trust. Your Michigan Medical Service and Hospital Service—Blue Cross—are a public trust. You didn't intend to do it so, and you didn't know that you had done it, but you have. You have taken fifty million dollars or so of the people's money and have used it for the benefit of the people. As such you are the trustees of a public trust!"

And only yesterday, recalling the Senator's words, recalling the scene, Dr. Haughey said:

"That was the most impressive thing that happened to me in all the years we worked to establish our prepayment programs. I listened to the Senator and thought

of the way we started with \$10,000 borrowed from the State Medical Society. I thought of the \$500,000 deficit we ran up during the first eighteen months. What Senator Vandenberg said changed my perspective."

The Senator's words changed the thinking, changed the perspective, of all in that little group. The words "public trust," pronounced by an outstanding leader, crystallized the thinking of the men behind Blue Shield and Blue Cross. It changed the history of the two services in many ways.

In a little more than three years after the above scene took place, Michigan's Blue Shield Plan had enrolled more than one in every three persons in the state.

Michigan Medical Service, established with a \$10,000 loan from the State Medical Society, was paying out \$1,000,000 a month for medical and surgical benefits to its members!

2

The story of Michigan Medical Service began as practically all things born of necessity begin. It began in a lot of different places, and in no two places in the same way. It began in the minds of many different people, and in each in a different way. But one thing must be said at once, must be set down at the cornerstone of all there is to be said—the doctors pioneered the effort from the beginning.

One can begin with the Calhoun County Medical Society. It was at a meeting of this Society, at the Athelstan Club, in Battle Creek, in 1931, that a plan was presented for establishing a medical insurance plan. The first plan was developed by Dr. Harry F. Becker, Dr. Joseph E. Rosenfeld and the late Dr. R. C. Winslow. Action on the proposed plan had to be abandoned when it was pointed out that the rules of the American Medical Association prohibited economic undertakings by affiliated medical societies.

Here is a point on which an honest man could



H. A. LUCE, M.D.

mistakenly build a case against the AMA, and which a fool could turn into a political issue. The view that professional and scientific societies must not be used for business undertakings was not peculiar to the AMA. Most professional and scientific societies guide themselves by this rule to this day. Any medical society is both a professional and a scientific society. And health insurance, viewed in 1931 terms, is obviously a business, is an unmistakable economic undertaking. The purpose of the rule was to protect the public interest, not to oppose it.

However, the grass roots medical societies, unlike the AMA, in Chicago, were under the direct pressure of what Santayana calls "the logic of things." It happened that the doctor, unlike the members of the other scientific professions, served each individual citizen on an individual basis. The economics of this individual and professionally individualized relationship was developing trouble. The depression brought all the troubles to a head. Rules or no rules, the Battle Creek doctors had to act in an organized way to set up the mechanics of an "economic undertaking" in order to provide medical and hospital care for those unable to pay any part or only a part of the costs.

In Detroit, the Wayne County Medical Society found itself in the same boat. There were rules, but the needy had to be served. Following a plan worked out by Dr. Ralph H. Pino, of Detroit, the Wayne County Medical Society headquarters became the co-ordinating center for a program that provided both medical and hospital care on an installment payment basis. The patients paid for their hospital and medical care at the Society headquarters, and the Society distributed the money it received to each co-operating doctor and hospital.

The same thing was happening everywhere. We see here a characteristic situation in human history. Facts have their way. They cannot be denied. But human beings do not live by facts alone. There are rules. Disciplines are necessary. Rules that have stood the test of time, that have helped lay the foundation for high ethical standards, that have made the medical societies progressive instruments in an ever-improved medicine—such rules cannot obviously be junked at the first crisis.

Insurance is a business. A scientific society, operating under a non-profit charter, must not

engage in business. Were the problems created by the depression purely temporary? Was the medical profession facing a revolutionary situation that called for an overhauling of its thinking and rules? It is easy to have a positive opinion today. But twenty years ago the issue raised was more than debatable. It was not only debatable among men, it was debatable, and was debated, in the mind of each doctor.

The march of events was settling the debate. As Dr. Haughey recalls, a survey on the cost of medical care, made in 1931, by the Michigan State Medical Society, and the Hoover Committee Report on the Cost of Medical Care, published in 1932, produced factual data, as well as an overall picture of the problem, which convinced an increasing number of doctors that it was to their interest to try to develop a voluntary prepayment plan.

To work out such a plan on the local level, the Calhoun County Medical Society appointed a new committee, consisting of Dr. Haughey, Dr. Becker and Dr. Harvey C. Hansen. The committee worked for two years. Finally, it came up with a medical prepayment plan which provided medical care in the home, the office and the hospital.

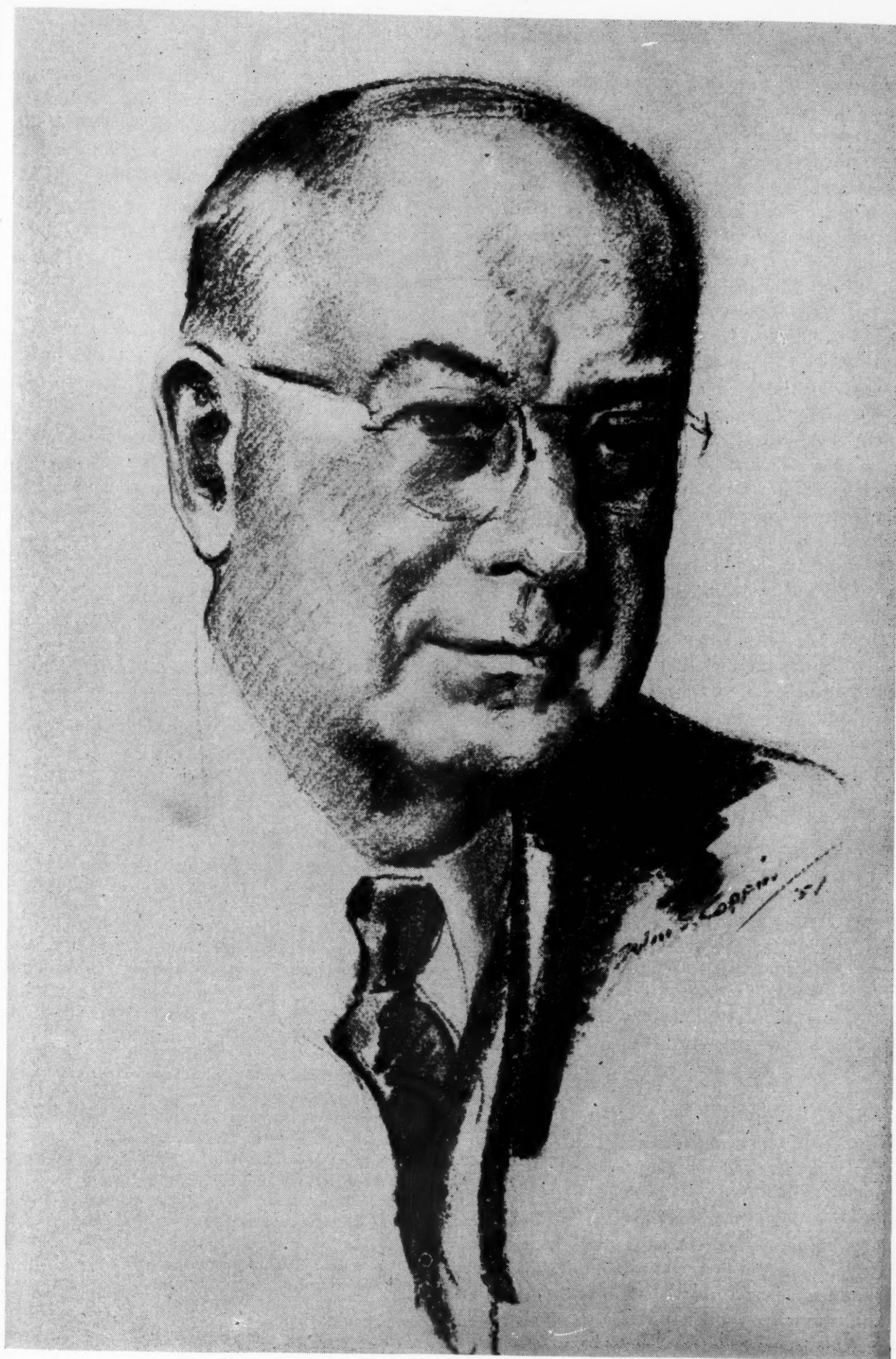
In 1934, the Calhoun County Medical Society adopted the plan developed by Dr. Haughey and his associates. That was more than ten years before Truman became President. But when everything was ready, the members of the committee were informed that they would violate the state insurance laws if they proceeded with their plan!

This is the story of the efforts of one grass roots medical society. But in the essentials of the thought, the planning and the frustration involved, it is by no means the story of only one society. The story began and ended long before Mr. Ewing appeared on the scene.

In many ways it is the story of one man—Wilfrid Haughey. It explains why, after seventeen uninterrupted years of effort and achievement, despite frustrating rules and laws, despite human obstinacy and human inertia, he found Senator Vandenberg's statement, that he had fashioned better than he knew, "the most impressive thing that had happened to me. . . ."

3

Michigan Medical Service is the child of the Michigan State Medical Society. The story of its



WILFRID HAUGHEY, M.D.

beginnings and growth is an inseparable part of the story of the State Medical Society.

It was at the meeting of the MSMS House of Delegates, at Pontiac, on September 22, 1931, that Dr. Alfred Whittaker, of Detroit, introduced a resolution calling for the State Medical Society to make a survey of all public health organizations in the state and of the work they were doing.

Dr. Whittaker introduced the resolution because he felt there was evidence that medical service to the public had not kept pace with medical knowledge. He attributed the situation to two factors. First, the depression had increased the number of indigent and semi-indigent patients, which development had increased the volume of charity cases each doctor had to handle while at the same time decreasing his income. Secondly, numerous organizations had appeared, under both medical and lay control, which were assuming with increasing aggressiveness the right to dictate the method of providing medical service for many groups.

Dr. Whittaker's resolution points up what has been forgotten in the 20 years that have intervened, and, because forgotten, so often distorted. The doctors were not just sitting tight in a nicely static situation. The country was undergoing an economic upheaval. Reformers were a dime a dozen, and all were thriving. While the doctors were doing their best to meet the needs of the people, they found themselves confronted by an insidious trend to take the rules and methods of medical practice out of their hands.

From the beginning, therefore, as Dr. Whittaker's statements indicate, the doctor had to fight a war on two fronts. On the one front, he had to mobilize quickly to stem the tide toward the socialization of medical practice through the use of corporate concepts and methods. At the same time he had to fight a war on his own professional front to overcome the traditional and ingrained reluctance on the part of the profession to pre-occupy itself with economic problems.

Dr. Whittaker's resolution was referred to the Council. On October 7, 1931, the Executive Committee, meeting at the Hotel Durant, in Flint, considered the resolution. After a long discussion—and all discussions were long in those days—the Committee on the Survey of Medical Services and Health Agencies was set up. Dr. Carl F. Moll, President, appointed the following members to serve on the committee: Dr. W. H. Marshall, of

Flint, Chairman; Dr. L. G. Christian, of Lansing; Dr. F. A. Baker, of Pontiac; Dr. C. S. Gorsline, of Battle Creek; Dr. B. V. Estabrook, of Detroit; and Dr. F. C. Warnhuis, of Grand Rapids, Secretary of MSMS, to serve as secretary ex-officio.

The Committee worked hard on the report it was set up to prepare. It made its report on July 12, 1933, at a special meeting of the House of Delegates, held in the Olds Hotel, at Lansing. Acting on this report, the House of Delegates established a standing Committee on Medical Economics. Dr. Marshall was made chairman. Dr. Baker, Dr. Christian, Dr. Estabrook and Dr. Gorsline were put on the new committee.

The Committee on Medical Economics was instructed to study, prepare and present for consideration of the House of Delegates a plan or plans for health insurance, based on the following principles:

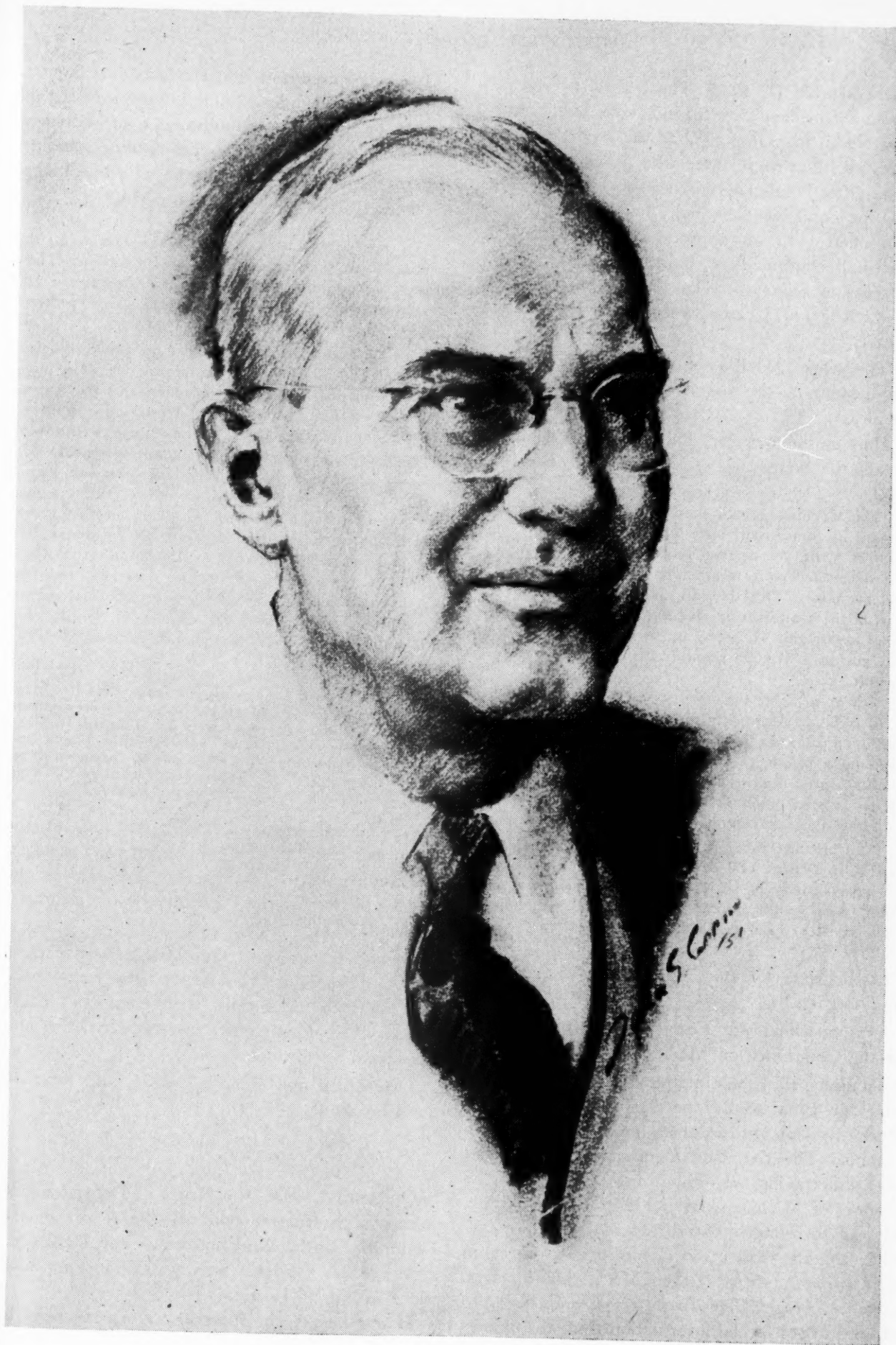
1. Free choice of physician by insured.
2. Limitation of benefits to medical services.
3. Control of medical service benefits by the profession.
4. Exclusion of individuals or organizations that might engage in health insurance for profit.

These principles give us a full outline of the future Michigan Medical Service. Commenting on this development, Dr. Henry Luce, of Detroit, President, Michigan State Medical Society, 1936, explained it as follows:

"At first the doctors decided to act in order to protect their own interests. Very soon they realized that the only way they could really protect their own interests was by serving the interests of the people. We could see this transition taking place when the Committee on Medical Economics was set up as a standing committee.

... "The closer we came to concrete action, the more pronounced became the opposition to action within the ranks of the doctors. Yet this opposition must not be mistaken for what it may appear to be to a lay person. It is a part of the training of the doctor, a part of his medical ideology, to receive another doctor's diagnosis or proposal with reserve. He becomes skeptical and even negative, when confronted by another doctor's proposal, even though his real impulse is to be positive and constructive. Thus, debate among doctors, even though it may sound uncompromising, has its own way of working itself out. The history of Michigan Medical Service has shown that. Its best leadership has ultimately come from those who were originally its most stubborn opponents."

The Committee on Medical Economics made its first report to the State Society, at Grand Rapids,



RALPH H. PINO, M.D.

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on September 11, 1933. The report covered proposals for medical care for indigents, public health and health insurance. While the report was well received, there were those who proposed that the Committee be discharged because of lack of funds. The proposal was defeated. The Committee was continued with an appropriation of \$500. Dr. Marshall continued as chairman, and Dr. I. W. Greene, of Shiawassee, Dr. S. Pritchard and Dr. P. A. Riley, of Jackson, were added to the Committee.

The years 1934-1935 proved very important in the history of the Committee on Medical Economics.

Here is the way Dr. Philip Riley, of Jackson, recalls the events:

"The Committee held its meetings at the Michigan Union, in Ann Arbor, on Sunday afternoons. We had a lot of plans. We wanted to do many things. We also felt we needed more information than we had. But we had no money. One day, Dr. James Bruce, Vice President of the University in charge of Postgraduate Efforts, came to our aid. He more or less took charge of things and got us a \$10,000 grant from Tracy McGregor, of Detroit.

"When we got the money, we borrowed Nathan Sinai from the University for a fee of \$4,000. Between 1933 and 1934, he had made a survey in Michigan of how much people spent on medical care, dental care, hospital care, drugs and special nurses. We felt we needed a man of his abilities to help us technically in gathering the information we needed.

"At Christmas time, 1933, we held a meeting at the Statler, in Detroit, and decided to send Sinai to Europe to make a study of what the European countries were doing with health insurance. I made the motion to send Dr. Henry Luce with him."

At the time, Dr. Luce was Speaker of the House of Delegates.

Nathan Sinai was made Director of Research of the Committee on Medical Economics.

Actually, the whole matter of sending Dr. Luce and Mr. Sinai to Europe was placed before the Executive Committee during the latter part of December. The Executive Committee realized that the undertaking was important not only to the doctors of Michigan, but to those in every state. It was, therefore, decided that it would be desirable for the Executive Committee to meet in Chicago with officers of the AMA, to plan the best possible course. The Executive Committee also desired to get special information from the officers of the AMA on health insurance in Britain.

It is recognized now that Dr. Luce had done an outstanding and indispensable job in providing the background for the establishment of Michigan Medical Service. However, the misunderstandings which dogged his efforts began at the Chicago meeting with the officers of the AMA.

"To me," Dr. Luce reported, "the results of this meeting—were both unsatisfactory and disturbing. Those present, in addition to the Executive Committee and Dr. Bruce, were Dr. West, Dr. Leland, Dr. Woodward and Dr. Cary, Ex-President of the AMA.

"The Michigan delegation placed its problem before these men and asked for specific information. The information requested was not forthcoming and the general attitude seemed antagonistic. Dr. West kindly explained the workings of the AMA; the discourse was not on the subject and failed to answer our questions. Dr. Leland appeared to be guarding 107 pages of manuscript on the subject of health insurance, but stated he was not in a position to report. Dr. Cary magnanimously offered advice that seemed to be a bit gratuitous. He said that we should thoroughly thrash out the whole subject, that we should not involve ourselves, and that Michigan should delay lest it get into trouble. In short, the advice was 'Do nothing.' All this, of course, gave little information and less comfort to the Michigan Executive Committee."

(Indicative of the tremendous change that has taken place in medical thought on the subject of prepayment, the Dr. Cary referred to above is Dr. Edward H. Cary, of Dallas, now President of both the Blue Shield and Blue Cross Plans of Texas. He is one of the most highly respected men in the AMA for his progressive and constructive attitude toward the whole problem.)

The Chicago meeting offers evidence of the quality of the leadership in Michigan's medical profession, and why Michigan's doctors took the lead in pioneering the voluntary health insurance program.

The meeting over, the Michigan Executive Committee, despite the discouraging experience with what Dr. Luce calls "their employees" in the AMA, voted unanimously to send Dr. Luce and Mr. Sinai to Europe.

They sailed on January 3, 1934, and returned on February 9.

4

On April 2, 1934, the House of Delegates held a special meeting to consider the report of the Committee on Medical Economics and Dr. Luce's report on his European survey. The meeting took place in Hurley Hospital, Flint.

It was one of the most important meetings in the history of the development of Michigan Medi-



HENRY R. CARSTENS, M.D.

cal Service. This time, the Committee on Medical Economics came up with a complete health insurance plan, and with a name for it—MUTUAL HEALTH SERVICE.

Dr. Luce's report had cleared the air for the members of the Committee. Their thinking became more concrete, their recommendations more urgent. At the same time, and perhaps inevitably the dissenters became more vocal and more bitter. Dr. Luce proved an excellent reporter as well as an astute observer. He reported that there was a trend toward socialization in Britain. Dr. Robert L. Novy, more or less a bystander at the time, says, "Dr. Luce was trying to warn us of the danger of such a trend developing here, unless we did something to meet the problem. But many mistook his statements and thought that he was advocating socialization."

Dr. Luce was a clear-thinking man with a gift for incisive speech. He was deeply shaken by the misunderstanding he encountered, and he often reacted, as Dr. Novy recalls, "like a fireball."

However, Dr. Marshall, the Committee's chairman, revealed a thorough and sympathetic understanding of the meaning of Dr. Luce's report. In his introductory talk, presenting the plan for Mutual Health Service, Dr. Marshall reiterated the Committee's loyalty to the four principles on which it had begun its work, adding:

"It has examined the available evidence concerning the operation, the defects, and merits of health insurance in other countries. As a result the conclusion has been reached that no system of health insurance now in existence completely conforms to the policies set forth. At the same time your Committee recognized the need of a more equitable distribution of the burdens of sickness and, through this, a wider distribution of the benefits of the medical services."

Thus Dr. Marshall succinctly summarized one of the major points in Dr. Luce's report, that while the British health insurance system was riddled with serious and dangerous shortcomings, it did not follow that these shortcomings were an inescapable part of any insurance system.

Dr. Marshall added:

"Finally, the Committee wishes to emphasize that the profession must grasp the dragging reins of medical economics. As great as is the need for a constructive program, it is no greater than the opportunity before the profession to publicly exhibit its ability and its willingness to act courageously and effectively in meeting the social and economic problems."

Dr. Frederick Warnshuis presented the plan for Mutual Health Service. It was to be a non-profit organization, and it was to provide health services at agreed costs to employed persons and to the families of employed persons.

Including the dependents of employed people marked a truly revolutionary departure from the prevailing practices among the commercial insurance companies. More, the plan provided for public representation on the Board.

The plan provided for medical and dental benefits in the home, office and hospital; as well as for "such services of medical specialists, nurses, pharmacists, laboratories and hospitals as may, in the opinion of the general practitioner, be necessary. . . ."

Hospital services included semi-private or ward bed, operating rooms, medicines, dressing, laboratory and other services "that may be provided in the hospital for a period of twenty-one days during any one year. For any illness requiring hospitalization for more than twenty-one but less than ninety days, the Mutual Health Service will pay 75 per cent of the per diem hospital charges." Special nurse services were provided for thirty days each year; visiting nurse services for sixty days. Drugs were to cost each member of the family 25 cents per prescription, the balance to be paid by Mutual Health Service.

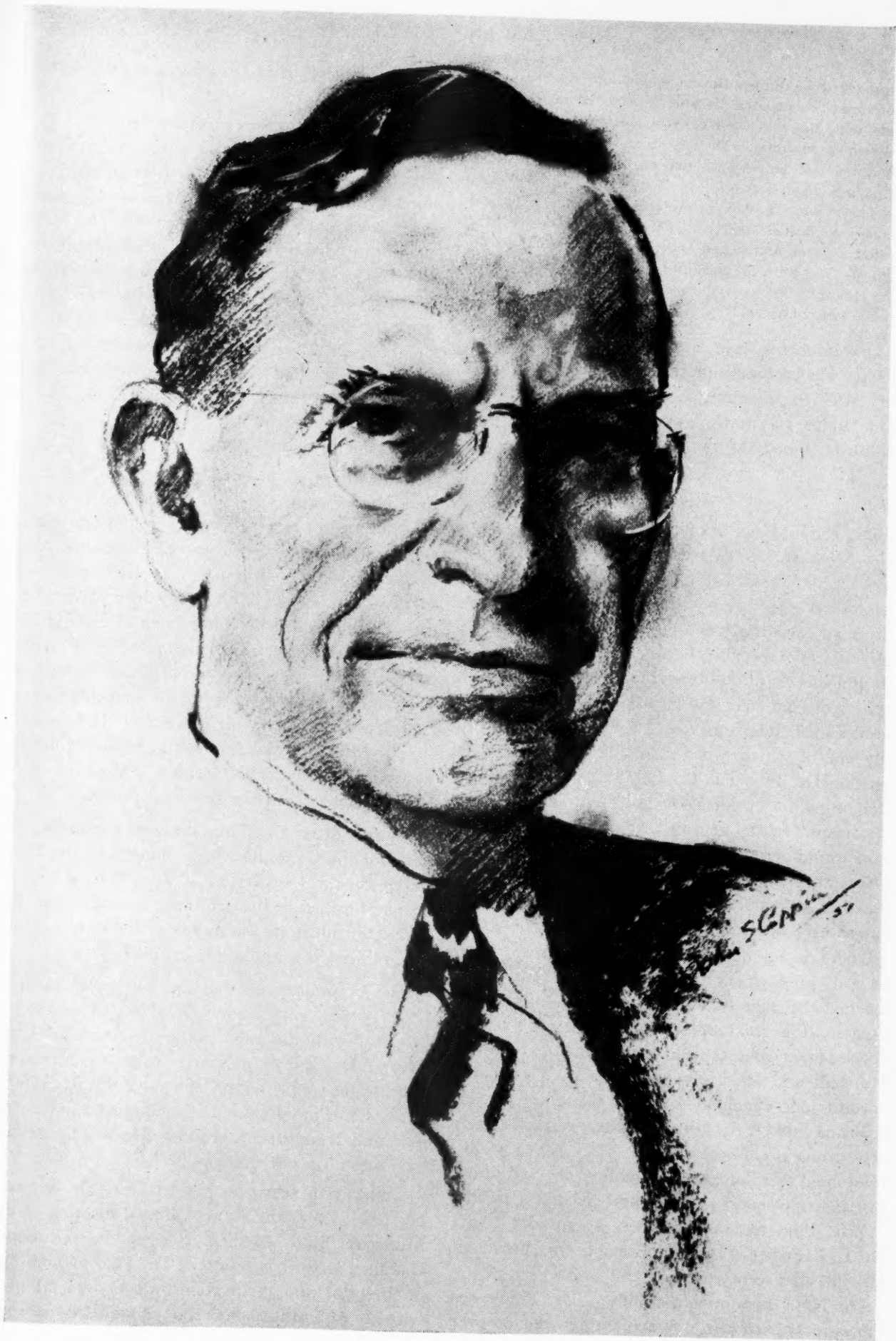
The annual costs of the services per person on the Family List were to be \$27.88.

The House of Delegates passed a resolution approving the Committee's report and recommending further exploratory work for presentation to the House for further action.

Commenting on the all-inclusive benefits proposed by Mutual Health Service, Dr. Philip Riley, a member of the Committee, said nostalgically: "Of course, at that time, a private room in a hospital in Jackson was \$5.00 a day!"

The resolution of approval, passed by the House of Delegates, left it up to the Committee to sound out employers and employees, and also to find the actuarial data necessary to justify its costs and benefits. The Committee's report recommended that the plan be adopted as an experimental project, "limited to one or more areas in the state." This also was no easy matter, the Committee was to find.

"In 1935," says Dr. Riley, "the Committee decided that we would like to try it out with one company. We



ANDREW S. BRUNK, M.D.

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approached Consumers Power, in Jackson. We considered Consumers Power ideal because it operated in the whole state with the exception of Wayne County. We spent one whole morning with the organization. They were interested but they would not go along with the idea of payroll deductions.

"There was another meeting of the State Medical Society, in Battle Creek, in 1935. The Committee submitted another report and wanted to know what to do with it. We were all sick of being called Communists. The House of Delegates shelved the report, but the Committee was continued."

Developments were approaching a climax. The debate was becoming more heated. On November 20, 1935, the Committee on Medical Economics met under its newly appointed chairman, Dr. Ralph H. Pino.

5

Dr. Ralph Pino belongs to that breed of men who for a variety of reasons—and often without any specific reason at all—manage to develop a reputation for being "visionary." If Dr. Pino offers any justification for being called a "visionary" it is not because he is an impractical man. He is a successful practitioner in a highly technical branch of medicine. He has a number of activities besides medicine, from farming to the handicrafts, any one of which could ruin a really impractical person. Dr. Pino has the habit of being passionately impolitic in pursuit of objectives he considers important. In the field of medical politics, a man who would serve a fixed objective at the cost of every other consideration is a man strikingly possessed of discomfiting recklessness. He could not but shortly become known as visionary.

There is no question but that the movement toward prepayment within medical ranks had reached the stage that called for a man with some capacity for recklessness. Any dynamic historic development uses up the leaders it creates. Dr. Marshall and Dr. Luce had done their very important jobs. Such men as Dr. Haughey, Dr. A. S. Brunk and Dr. L. Fernald Foster were stabilizers and strong organization men. They gave the development the invaluable quality of continuity. But the movement at this point needed a gadfly.

"Dr. Pino had always been a crusader," says Dr. L. F. Foster. "He could have been a preacher. His speeches were sermons."

Dr. Novy says unequivocally: "Dr. Pino's enthusiasm carried the prepayment movement over the hump."

One might say that Dr. Pino was picked by the situation.

At the special meeting of the House of Delegates, on April 12, 1934, at Flint, the resolution approving the Mutual Health Service plan, proposed by the Committee on Medical Economics, was passed by a vote of 61 to 9. The debate which preceded gave the vote this significance: The leaders of Michigan's medical profession had accepted the insurance principle as the instrument for meeting the problem they faced. Dr. Marshall, Dr. Luce and the Committee on Medical Economics, had done a remarkable job. How to put the insurance principle to work was the problem.

The "how," in fact, posed a lot of problems. Actuarial data on hospital and medical insurance were non-existent. None of the doctors knew how to write an insurance contract, or had any experience in operating an insurance undertaking. Much of the opposition, and many of the reservations expressed by members of the County Medical Societies, could probably have been overcome in a short time if a practical program were offered; if Mutual Health Service could begin to do business. The lack of know-how, with the resulting lack of confidence, were the big obstacles. It was clear that the doctors had in the main undergone the necessary ideological transition. Most of them were worried about the practical problem.

Shortly after Dr. Pino became chairman, the name of the Committee was changed to the Committee on the Distribution of Medical Care. The change testified to the profound crystallization that had taken place in the minds of the doctors since Dr. Whittaker's resolution in 1931.

The Committee on the Distribution of Medical Care got to work under Dr. Pino to develop a proposal with the least possible number of bugs. One of Dr. Riley's memories casts an interesting light on the problem the Committee faced: "About 1938, Dr. Pino found an unemployed insurance man and brought him around. He was the fellow who wrote up our first policy."

Things now began to happen fast. On September 19, 1938, at the regular annual meeting of the Michigan State Medical Society, in the Book-Cadillac, Detroit, a report of Dr. Pino's committee on hospital and medical insurance, was adopted without opposition, but the Committee was instructed to give the matter further study. A spe-



L. FERNALD FOSTER, M.D.

cial meeting of the House of Delegates was held on Sunday, January 8, 1939, to consider the Committee's final proposal.

Dr. Pino read the report, which dealt with:

1. A proposed Enabling Act, to be passed by the State Legislature, covering both hospital service and medical care.
2. The proposed by-laws of the corporation which the doctors would set up under the Enabling Act, with provisions for both hospital service and medical care.
3. The Articles of Incorporation, for the corporation to be set up by the Michigan State Medical Society, under the proposed Enabling Act.

The report contained schedules of proposed rates and benefits.

After a long discussion, the House approved the report in principle, but turned the matter over to the Council for action.

Less than two months later, on March 23, 1939, the Group Medical Care Enabling Bill, House Bill No. 215, was passed by the Michigan House of Representatives by a vote of 78 to 5, becoming Michigan Public Act No. 108 of 1939.

On September 18, 1939, at the 74th annual meeting of the State Medical Society, in the Pantlind Hotel, Grand Rapids, Dr. C. E. Umphrey presented the Council's fully developed medical service plan, entitled: "Michigan Medical Service." Trouble had been expected. The Michigan Medical Service Plan was actually presented the evening before in an informal way, with a half dozen of the Councillors taking turns. At the beginning of the meeting, Dr. Luce, President, urged that the House approve the work of the Council. After finishing the reading of the report, Dr. Umphrey moved "that the Council be empowered to complete the present plan entitled "Michigan Medical Service, and that the Council be empowered to put this Plan into operation." His motion was seconded by Dr. A. P. Biddle.

After a long discussion, the question was called for. Dr. Philip Riley, Speaker, put the motion to a vote with the words: "We are going to vote, and if you are not satisfied, forever hold your peace!"

The motion was carried by the record vote of 102 to 1.

6

While the doctors of Michigan were making history, the Department of Justice in Washington

indicted officials of the American Medical Association and of the District of Columbia Medical Society for "conspiring" to hinder some doctors in the Nation's Capital from practicing in a group medical plan. Thus far, middle-of-the-road leaders in the American medical profession had hoped to develop a national health program on which the medical profession and the Federal government could co-operate. The action by the Department of Justice dimmed all hope of such a development.

Said Dr. Luce, who had spent so many years in laying the foundation for Michigan Medical Service:

"I, for one, feel that as a physician, personally, I have been indicted by the U. S. government. . . . The . . . reflection upon the integrity of the American Medical Association is considered by me as a reflection upon myself."

7

Michigan Medical Service began operations on March 1, 1940. As might have been expected, the first two years proved hectic.

First of all, the doctors found themselves far ahead of the public in the program they offered. Michigan Medical Service began by providing complete medical care, including services in the patient's home, the doctor's office and the hospital. On the basis of speculative calculation, since no actuarial data were available, the cost for full family protection was set at \$4.50 a month. It was shortly discovered that the resulting income barely covered half the actual cost of the medical-surgical services rendered the members.

On top of that, public interest in the bargain price program was negligible.

A deficit began to develop. While the doctors had overwhelmingly endorsed the insurance principle, there had never been overwhelming confidence in the ultimate success, or even the practicality, of the undertaking. Now that troubles began to develop, those who had been skeptical but willing to go along, and many of those who had reservations, became openly critical.

Dr. Henry Carstens, first President of Michigan Medical Service, became the central figure in the drama which unfolded.

"Dr. Carstens seemed the logical man for the job of president," says Dr. Brunk. "He was chairman of the Council of the State Medical Society. He had life insur-



PHILIP RILEY, M.D.

WITH FIRM AND REGULAR STEP

ance experience. His father was a prominent Detroit surgeon who had been head of the medical department of a life insurance company. When his father died, Dr. Carstens took his place as head of the medical department. In the early period we couldn't have found anyone as good. He was conservative and exacting. But there came a time when extreme conservatism became an obstacle. In particular he was uncompromising with the opposition doctors. He became the target of the ill will of the group of doctors that opposed the whole effort. He made bitter enemies, but his entry into military service eventually led to a necessary change in leadership.

Actually, Dr. Carstens had stepped into a delicate situation. Dr. Riley recalls that at the special meeting of the House of Delegates in the Statler, Detroit, on Sunday, January 8, 1939, doctors from Genesee County led the debate in opposition to the establishment of Michigan Medical Service. Dr. Brunk remembers:

"The spark plug of the opposition was Genesee County. And the doctors in Ingham and Oakland Counties were allied with the Genesee County group. The Genesee County Medical Society, as I recall, employed an attorney and threatened to sue the insurance commissioner to restrain him from permitting us to operate Michigan Medical Service. . . .

"From the beginning, Flint doctors refused to accept Michigan Medical Service checks. When the suit was threatened, many of us began to worry about the damage to our undertaking. I called Dr. Henry Cook, former president, M.S.M.S., and asked him to bring a delegation to the Statler, in Detroit, to discuss the situation. Cook came with about a dozen people. It was a summer evening. It became evident early that there was no basis for compromise."

Dr. Haughey recalls:

"The meeting at the Statler with the Flint delegation started at four in the afternoon and ended between three and four in the morning. They were frank discussions. We found out where they stood and then did the job the only possible way. . . ."

The hectic discussions which lasted until all hours of the night became more frequent and more hectic as troubles increased for Michigan Medical Service. Everyone was tired after these meetings and no one could think straight. Unfortunately, Dr. Carstens had lost his popularity and became the target of criticism.

Not all of the participants in the confusion of those early days are agreed upon Dr. Carstens. Dr. L. Fernald Foster feels that "Dr. Carstens was the pioneer who made it possible to start Michigan Medical Service. He worked night

after night and devoted his whole time to his job." In his opinion, Dr. Carstens was the victim of circumstances.

It was in 1941, when Michigan Medical Service was getting deeper and deeper in the red, that Dr. Robert L. Novy was elected to the Board of Directors. He was elected without his knowledge at a meeting of the Board at the Pantlind Hotel, Grand Rapids, September 17, 1941. He was nominated by Dr. Simpson and Dr. Ratigan. Although he was not notified of the next meeting, he found out about it and attended it. When he got there, he took the stand that the meeting was not legal since the members of the Board had not been properly called by Dr. Carstens. Somehow, Dr. Novy had become identified with the opposition. In the intensely emotional situation, his strong, positive stand against the haphazard and often arbitrary way in which the Board's business was being conducted won him immediate attention.

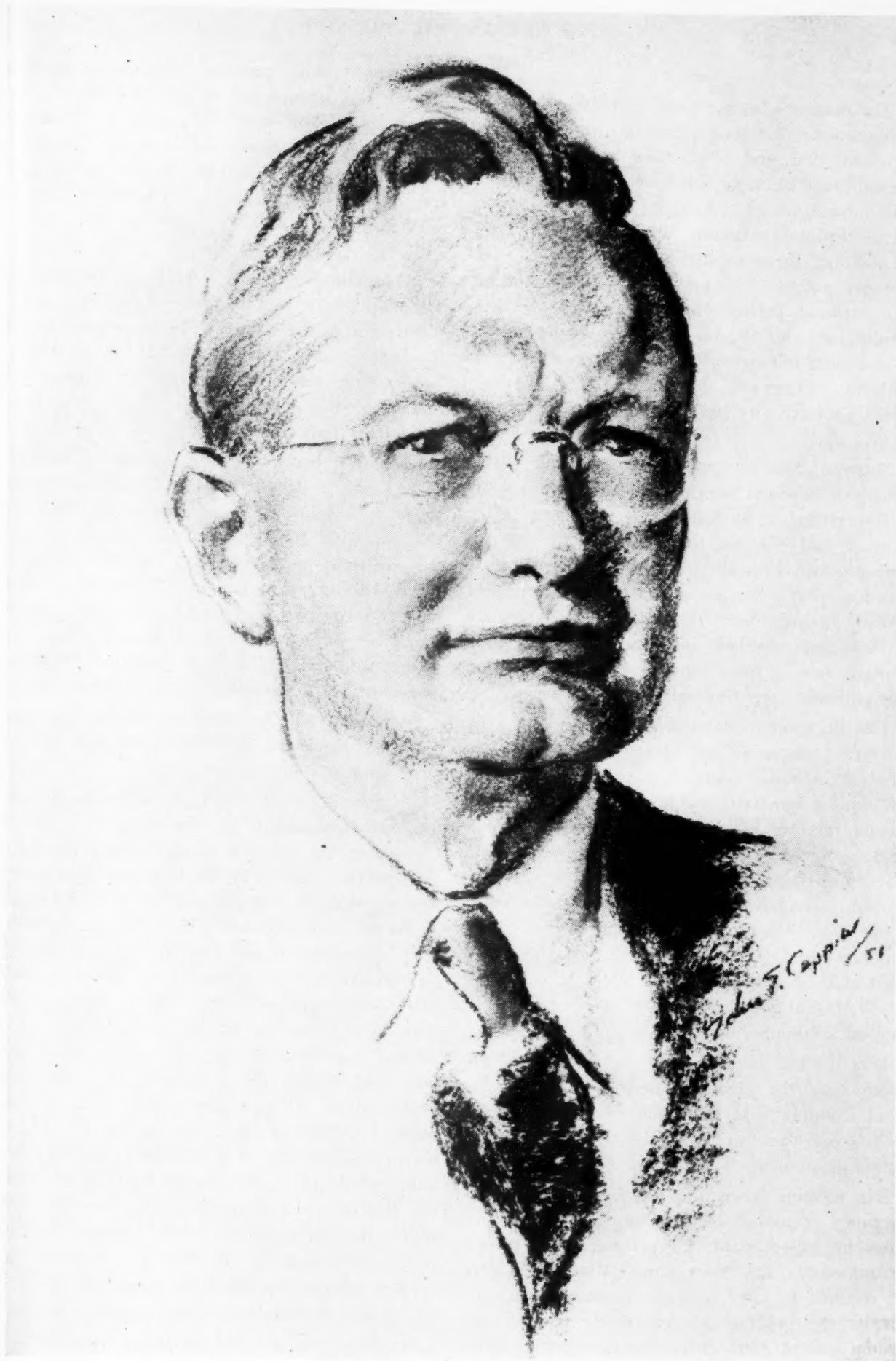
Shortly, Michigan Medical Service was \$500,000 in debt and had about \$2,000 in the bank. The office of the Insurance Commissioner found it necessary to intercede. As Dr. Haughey recalls the events:

"The Insurance Commissioner came in and said he would have to close us up. We asked for a three-month leeway. He said he would give us the leeway if we put somebody in charge he could trust. We asked for Jay Ketchum, who was Deputy Insurance Commissioner. We made arrangements to borrow Jay for six months."

That is how Dr. Novy, the future President of Michigan Medical Service, and Jay C. Ketchum, its future Executive Vice President, stepped upon the scene. The times were certainly inauspicious. The extremists in the opposition were negotiating to turn the whole thing over to a Detroit commercial insurance agency.

By many of the opposition, seemingly determined one way or another to end the experiment, Ketchum was regarded as "the undertaker sent to bury Michigan Medical Service and Dr. Novy as the man selected to read the funeral sermon."

As it happened, under the leadership of these two newcomers, and the allowance of increased premium rates, Michigan Medical Service was shortly to become the nation's outstanding Blue Shield Plan—the first to enroll a million members and the first to enroll two million members!



ROBERT L. NOVY, M.D.

The doctors who had participated in the hectic deliberations that took place during the critical years of 1941 and 1942, have the definite impression that Michigan Medical Service was saved by almost a miracle. Actually, while there was a great deal of criticism and even more dissatisfaction, there appears to have been an even stronger desire to go on with the effort. This desire found perhaps less voice than the dissatisfactions, but one feels that it was there, that it was mute but strongly felt in the hearts of the majority. Otherwise, Michigan Medical Service could not have survived. A few stalwarts refused to give up.

Between March 1, 1940, and April, 1941, Michigan Medical Service met all payments in full according to its Schedule of Benefits. After April 1, 1941, it was forced to make a 20 per cent pro-ration on all payments. With the proposed General Motors contract, the impression spread among many doctors that that would further decrease their income. This was particularly true in those counties where the bulk of the patients were General Motors employees.

The situation made action necessary in regard to the question of an income ceiling on the General Motors contract, as well as other questions it had raised. On October 21, 1941, a special meeting of the Board of Directors was held to consider this problem. On October 31, a recessed special meeting of the Board took this problem up again. Walter Reuther was present. While Dr. Cook, speaking for the Genesee, Ingham and Oakland County doctors, said that most of them would refuse to participate further in Michigan Medical Service, Walter Reuther showed a co-operative attitude.

When asked by Dr. Pino if labor would go along with the obviously necessary increase in rates, Reuther said that labor would be happy to help and that "we appreciate that doctors have economic problems."

The meeting lasted until the early hours of the morning. A motion by Dr. Pino that subscription rates be raised about 25 per cent was passed unanimously. Dr. Novy moved that the officers be directed to meet with the employe groups to discuss the problem of readjusting the income ceiling, and of extra charges to the above-income groups. This, too, was carried unanimously.

Ketchum was present. Michigan Medical Service was passing through a crisis, but it was very much alive and fighting every moment. Reuther's attitude heartened everybody. Says Dr. Novy, "Reuther appeared twice before the meetings and his urging us to continue had its effect."

At another special meeting of the Board of Directors, on November 5, 1941, further progress was made, with Reuther present, in working out the details of the General Motors contracts, and in shaking down the general Michigan Medical Service contract to more practical terms. Dr. Pino suggested that Ketchum be interviewed for the job of Executive Secretary.

On November 17, it was announced that Jay C. Ketchum had been hired as Executive Director to succeed John D. Laux. Before he took his position with Michigan Medical Service, Laux was assistant to Dr. Roscoe Leland, head of the AMA Bureau of Economics. By all accounts he had proved a competent and hard-working Executive Director. The trend was, however, toward a complete change in executive personnel and Laux bowed graciously out of the picture.

In June, 1942, the complete medical care program was discarded, and one substituted offering only limited or surgical protection.

On July 22, 1942, Dr. Carstens resigned to go into active service in the United States Army as Colonel in the Medical Corps. Dr. Brunk and Dr. Haughey moved at the Executive Committee meeting that Dr. Novy be suggested to the Board of Directors for the office of President until the next annual meeting. The motion was carried. Dr. Haughey, who seconded the motion, says: "Dr. Novy was one of our worst critics. They darn near threw me off the Board of Directors when I suggested that they make him president." But the Board of Directors, on Thursday, September 3, 1942, at the Hotel Olds, Lansing, made Dr. Novy President. On October 31, at the annual meeting of the Board, Dr. Novy was unanimously re-elected president for a full term. Dr. Haughey, who had been vice-president since the establishment of Michigan Medical Service, was re-elected again, and still is vice president.

"For talking too much in Grand Rapids," is Dr. Novy's explanation, "I was elected president."

Dr. Novy became the inevitable candidate for the office of the presidency for four reasons:

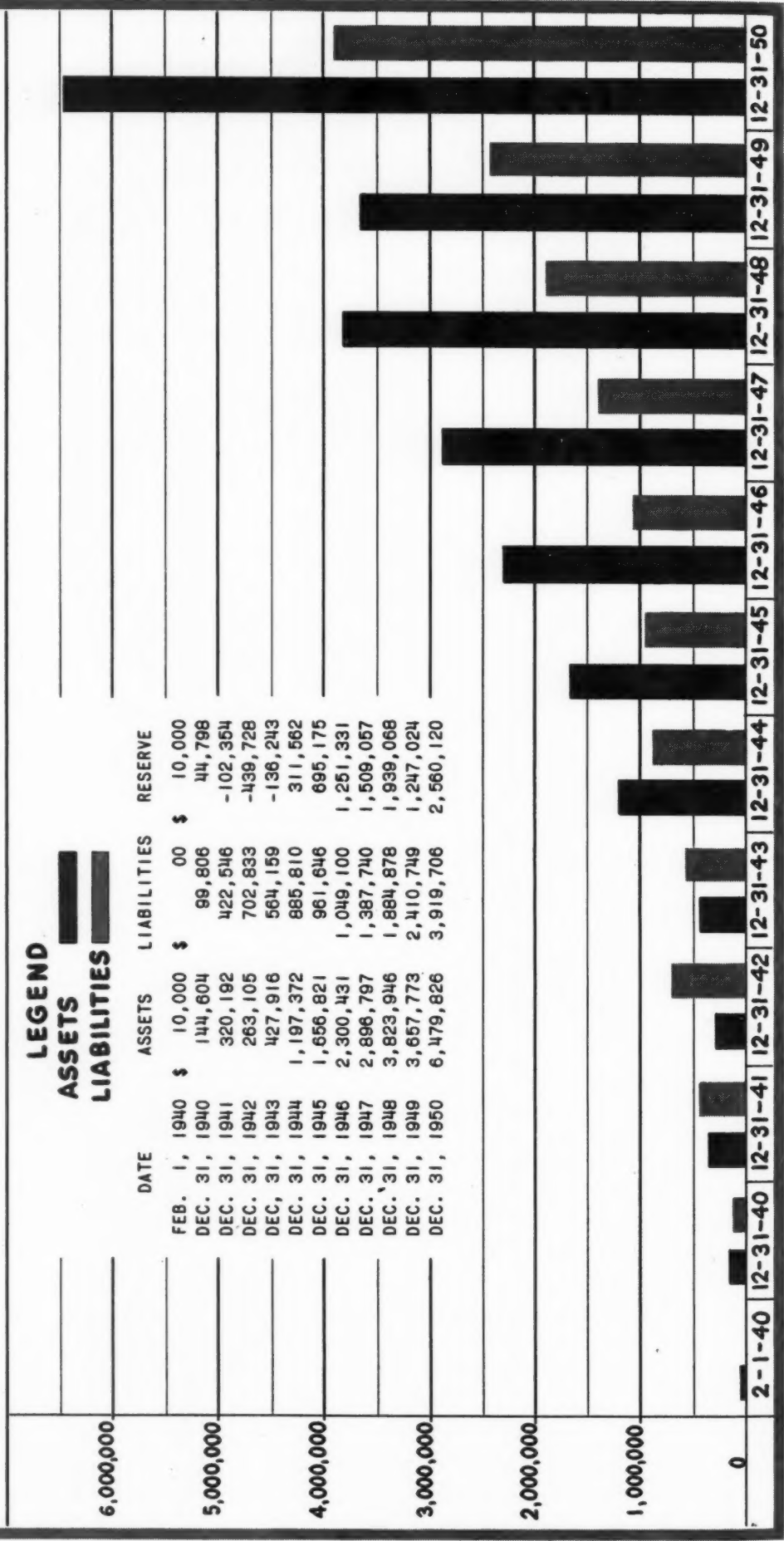


JAY C. KETCHUM

JUNE, 1951

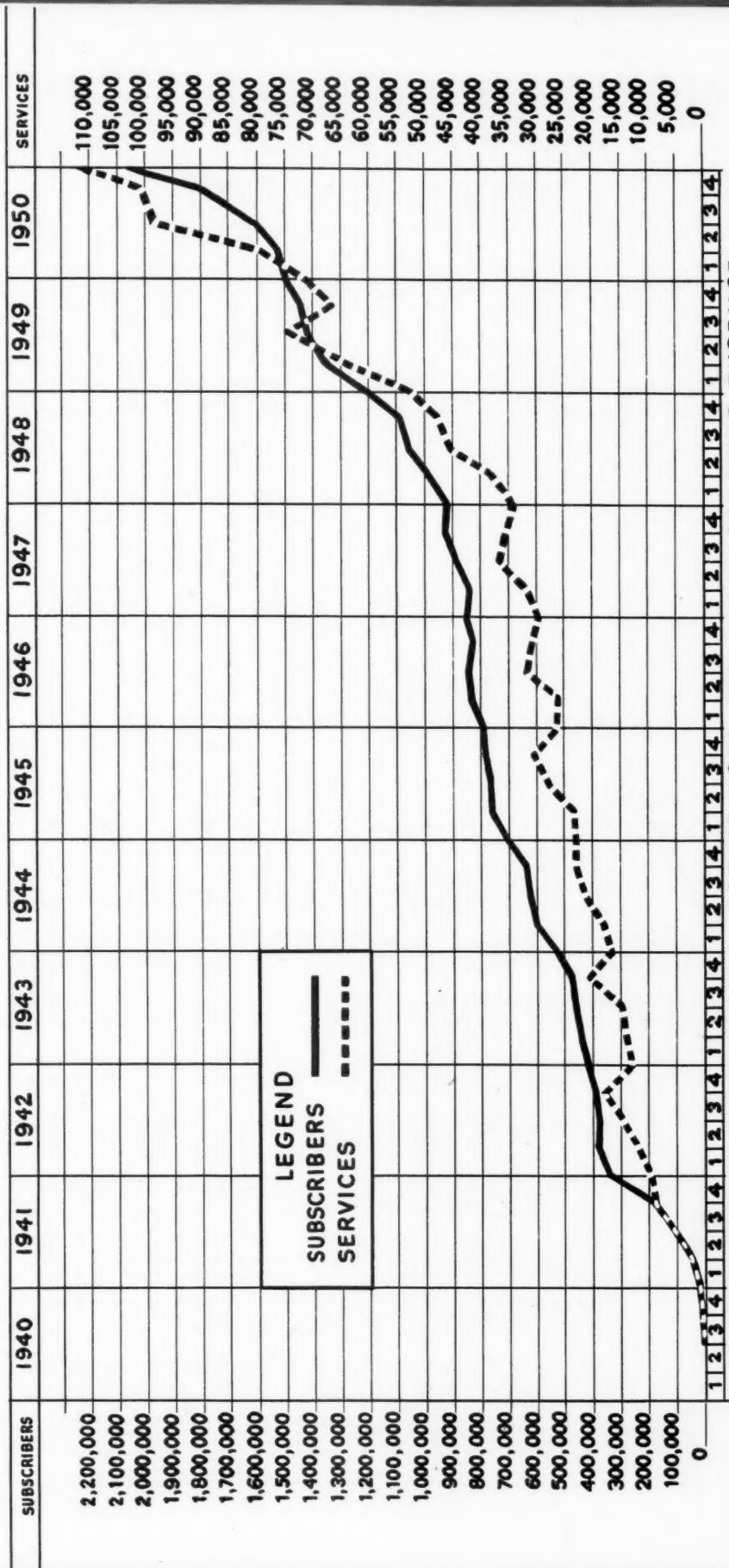
MICHIGAN MEDICAL SERVICE

ASSETS AND LIABILITIES
1940 TO DECEMBER 31, 1950



MICHIGAN MEDICAL SERVICE

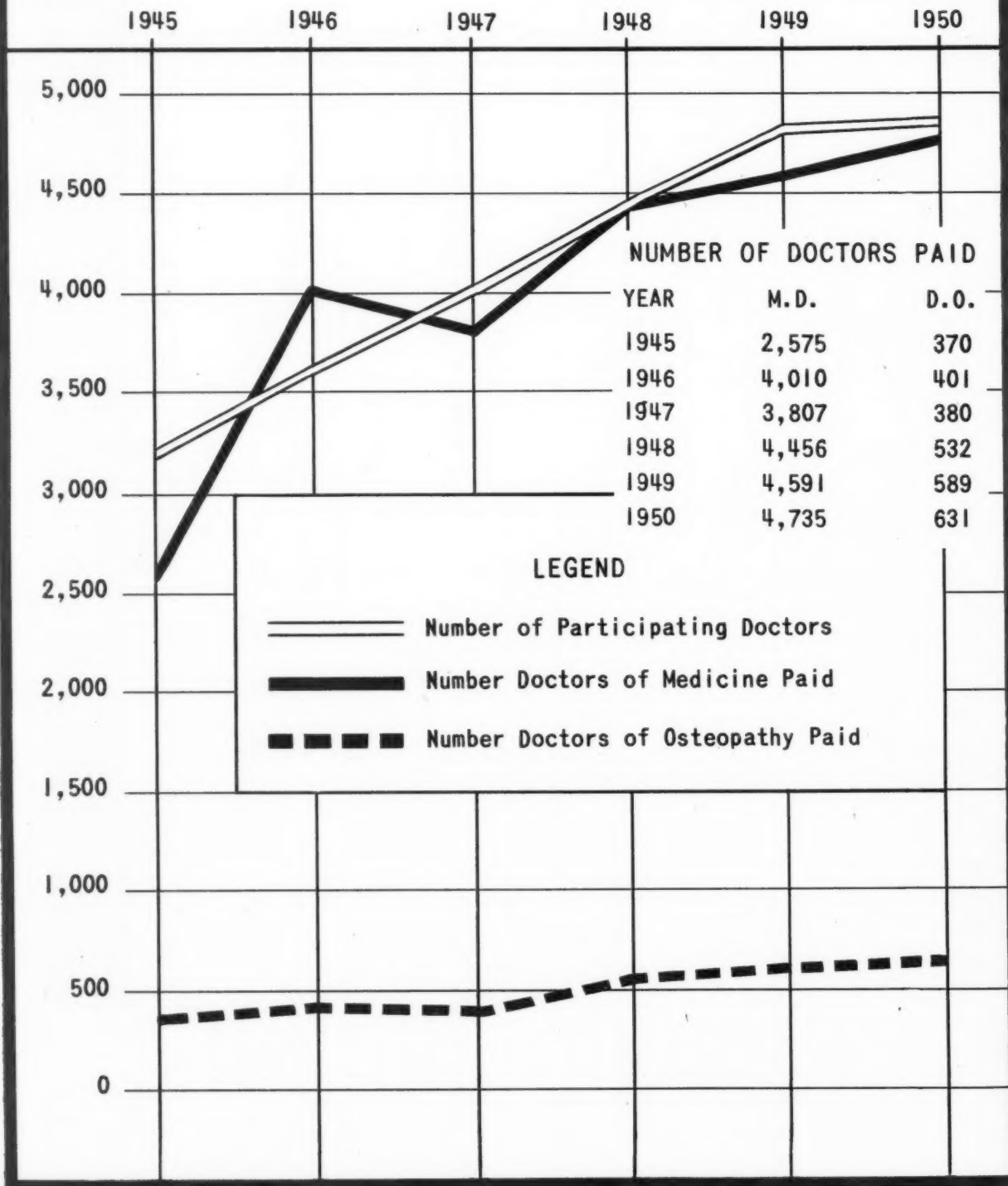
NUMBER OF SUBSCRIBERS AND NUMBER OF SERVICES



MICHIGAN MEDICAL SERVICE

NUMBER OF PARTICIPATING DOCTORS AND DOCTORS PAID
1945 THROUGH 1950

NUMBER
OF
DOCTORS



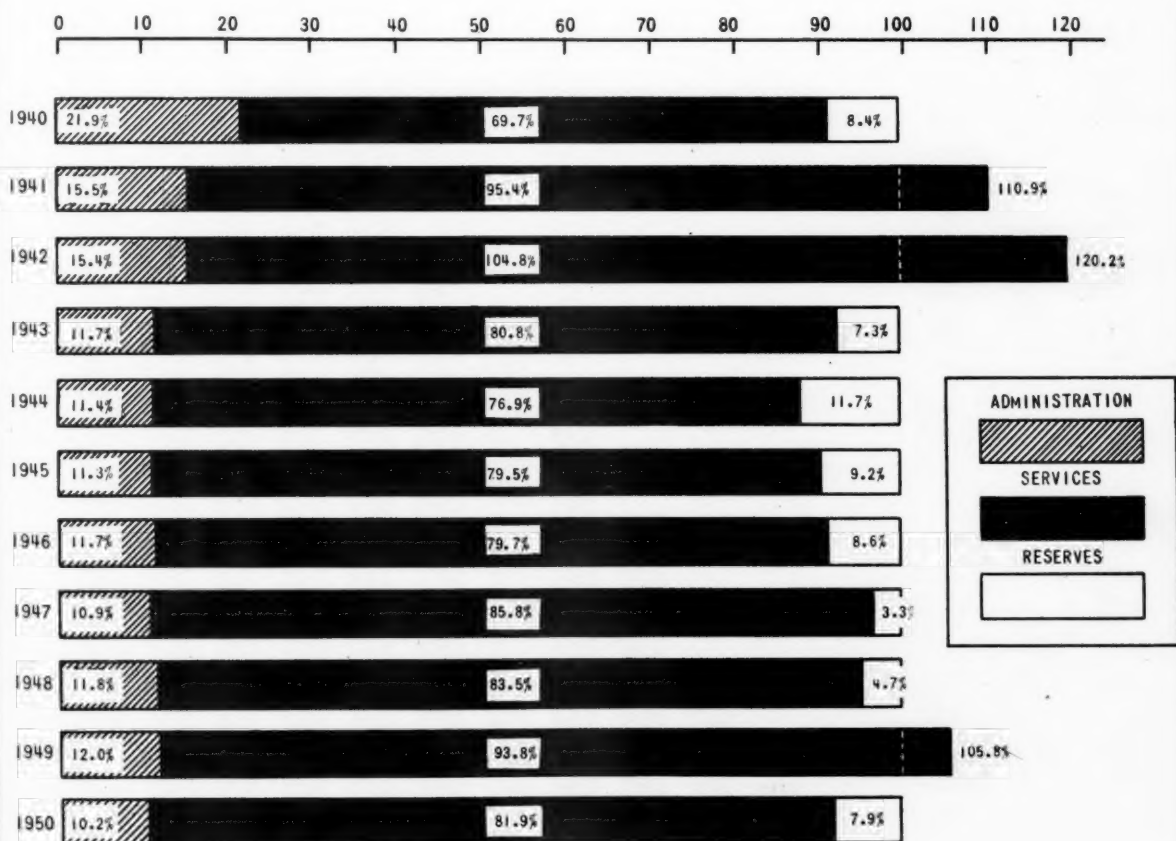
MICHIGAN MEDICAL SERVICE

PERCENTAGE OF INCOME USED FOR OPERATING EXPENSES, PAYMENTS TO DOCTORS AND RESERVES

YEARS 1940 THRU 1950

Year	Earned Income	Operating Expenses	Payments to Doctors	Gain or Loss *
1940	\$ 363,438.12	\$ 79,488.96	\$ 253,303.00	\$ 30,646.16
1941	1,110,302.10	172,073.80	1,059,048.17	120,819.87 Dr.
1942	2,455,552.38	378,293.54	2,573,110.82	495,851.98 Dr.
1943	3,367,290.86	393,766.17	2,720,071.45	253,453.24
1944	4,517,774.26	515,921.69	3,475,263.35	526,589.22
1945	5,420,350.85	610,907.47	4,308,285.18	501,158.20
1946	6,424,966.57	748,961.92	5,119,848.80	556,155.85
1947	7,861,842.69	859,970.75	6,744,145.04	257,726.90
1948	9,028,492.77	1,061,839.00	7,536,643.74	430,010.03
1949	11,836,621.39	1,420,581.91	11,108,083.18	692,043.70 Dr.
1950	16,563,929.37	1,693,198.87	13,557,634.83	1,313,095.67

* These figures present the increase or decrease in reserves by years.



MICHIGAN MEDICAL SERVICE

Paid to Doctors For Services

By Years—1940 to December 31, 1950

		TOTAL AMOUNT PAID		
		MICHIGAN DOCTORS OF MEDICINE	MICHIGAN DOCTORS OF OSTEOPATHY	OUT OF STATE DOCTORS OF MEDICINE
1940	\$ 172,115.00			\$51,180,849.57
1941	\$ 789,254.88			3,595,603.05
1942	\$2,208,623.42			983,974.10
1943	\$2,876,547.90			\$55,760,426.72
1944	\$3,437,256.50			
1945	\$4,155,422.68			
1946	\$5,106,279.90			
1947	\$6,554,589.69			
1948	\$7,125,912.24			
1949	\$10,776,993.61			
1950	\$12,557,421.90			

Payments to Doctors of Medicine
By County of Residence—March 1, 1940 to December 31, 1950



WITH FIRM AND REGULAR STEP

1. The doctors trusted him. He was one of their own kind, understood their problems, their thinking and their apprehensions. Even those who remembered him as "their worst critic" trusted him on fundamental matters, shortly became his strong supporters.

2. He showed a real capacity for getting to the heart of things. But he did not talk down to the doctors. He was learning with them, fighting with them. When an explanation was in order he was patient. He could be firm and determined; even obstinate. But he understood the importance of achieving understanding. He did not go in for short-cuts. He showed real executive skill.

3. There fell to him a good share of the popularity and affection enjoyed by his father, Dr. Frederick G. Novy, whom so many of Michigan's doctors got to know when he was Professor of Bacteriology at Ann Arbor. The name "Novy" had a magic.

4. He had the insight to get at once to the heart of the problem as the doctors saw it. They were afraid that participating in Michigan Medical Service might tend to become compulsory; that there might be discrimination, with serious economic consequences against those who did not care to become participating physicians in the Plan. Dr. Novy assured them at once that there would be no compulsion. There would be no discrimination. He said that he would count on "moral" force, on the accumulating evidence of the social and moral value of Michigan Medical Service to the doctors, to convince each doctor of the advantages of being a participating physician. There would be no economic pressure and no economic reprisals. Because of his reputation and his personality, the doctors believed him.

Now Michigan Medical Service was pulling out of the hole. Within 27 months more than 350,000 persons were enrolled under the limited surgical contract. The jittery days were gone. In 1944 it repaid to all the doctors the 20 per cent that had been withheld since pro-rating was started in April, 1941.

"We sent the checks to the doctors who were in the Armed Services," Dr. Novy said. "Their getting the money was a surprise that brought us many letters and

changed the attitude of many of them to favor Michigan Medical Service.

"One of the most surprising letters was from Dr. Carstens. He said that he had been expecting a letter saying that Michigan Medical Service had closed. He had not expected a check."

During June and July, 1944, Michigan Medical Service conducted a survey, involving interviews with nearly 5,000 people throughout Michigan, to determine the type of medical coverage the people wanted. Most showed little interest in medical services in the doctor's office or the patient's home.

In 1945, Dr. Novy had the pleasure of repaying the Michigan State Medical Society the original \$10,000 borrowed to start Michigan Medical Service, plus an additional \$7,544.45 borrowed at other times for other purposes. By the end of that year its enrollment stood at nearly 800,000 members, and it had a reserve of \$695,175.

As has been noted before, one of the major sources of the troubles Michigan Medical Service ran into was the fact that its medical program was far ahead of what the people were prepared to accept. However, now that a real prepayment program had become available, public education began to catch up. Within a few years, Michigan Medical Service found it advisable to add medical care in the hospital to its purely surgical benefits. On September 1, 1948, Michigan Medical Service certificates were liberalized to provide surgical care in doctors' offices and hospital out-patient departments, in cases involving Blue Shield fees of \$20.00 or more. A year later the medical certificates were liberalized, increasing the number of days of care in the hospital from 30 to 120.

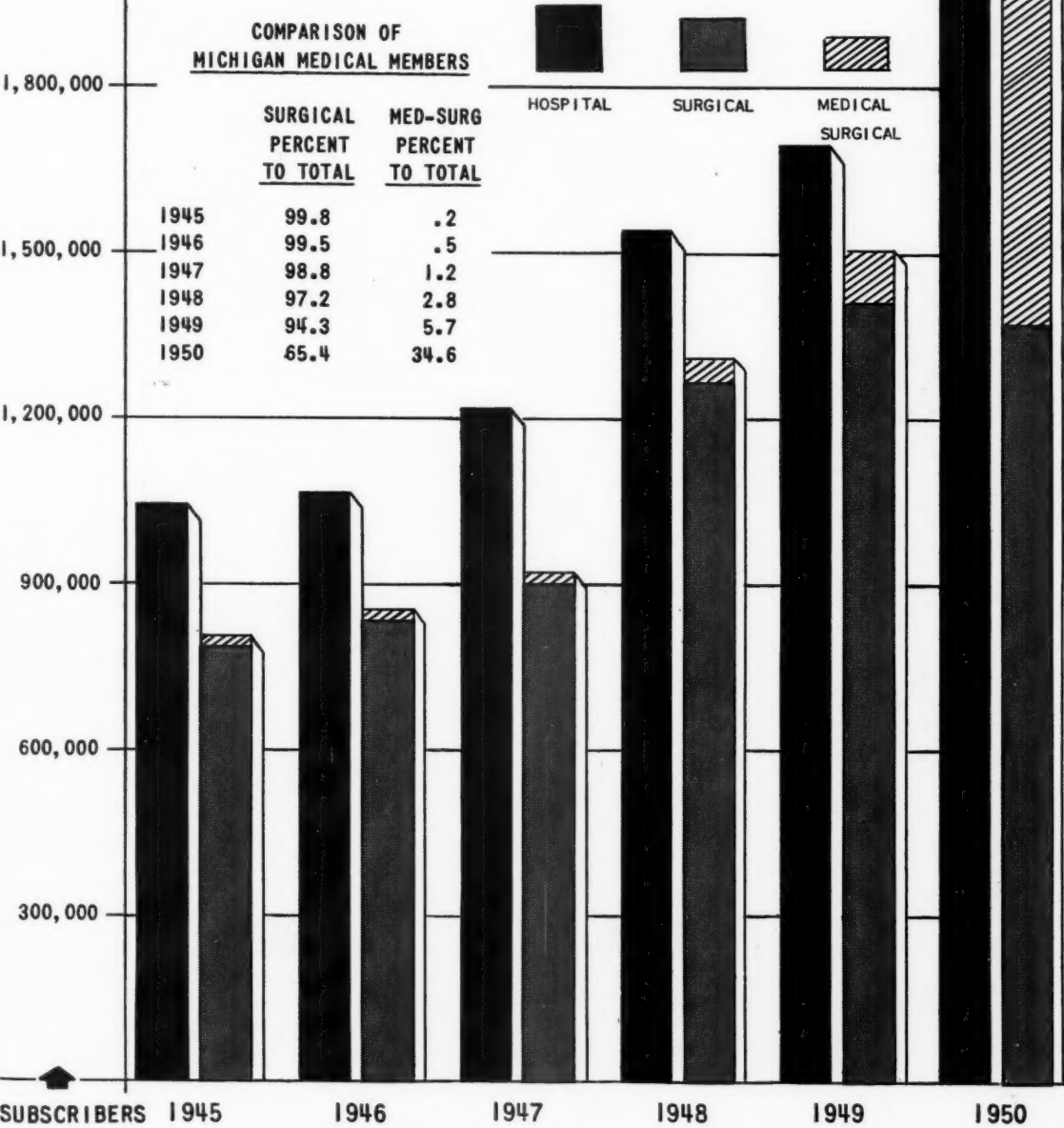
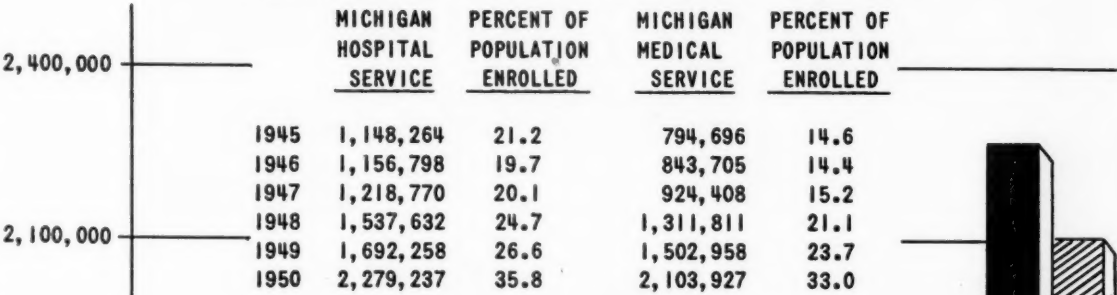
And in 1948, Michigan Medical Service won the Blue Shield Commission award for being the first Blue Shield Plan to enroll one million members.

Michigan Medical Service operates as a companion organization to Michigan Hospital Service, the Blue Cross Plan, and until recently was commonly known within the state as Michigan Blue Cross rather than Blue Shield.

Subscribers to both Plans are enrolled simultaneously, and enrollment programs are mutually developed. The majority of subscribers to Blue Cross-Blue Shield are industrial and business employees, enrolled as groups in their places of

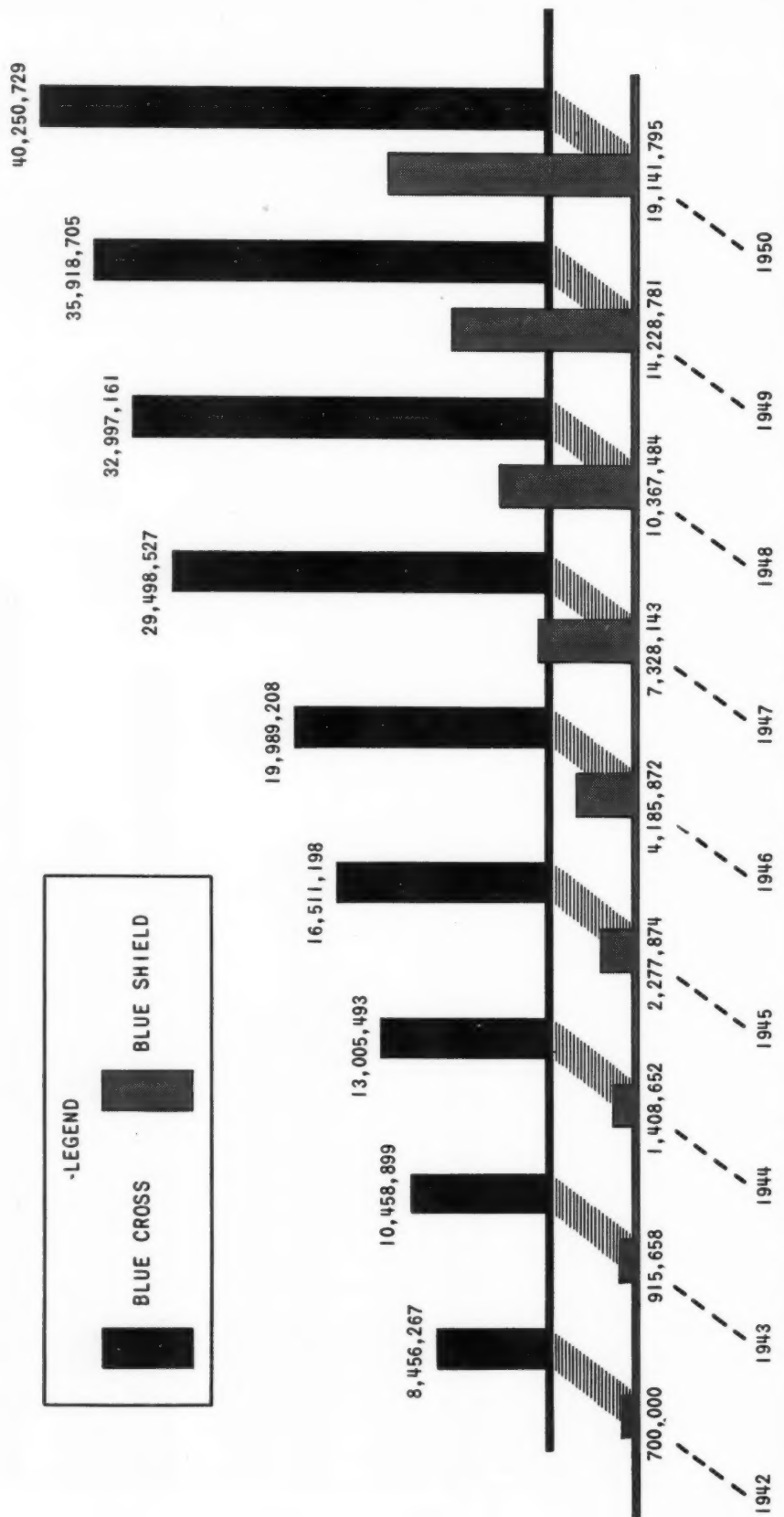
MICHIGAN BLUE CROSS-BLUE SHIELD ENROLLMENT

COMBINED GROWTH BOTH PLANS



NATIONAL BLUE CROSS-BLUE SHIELD ENROLLMENT

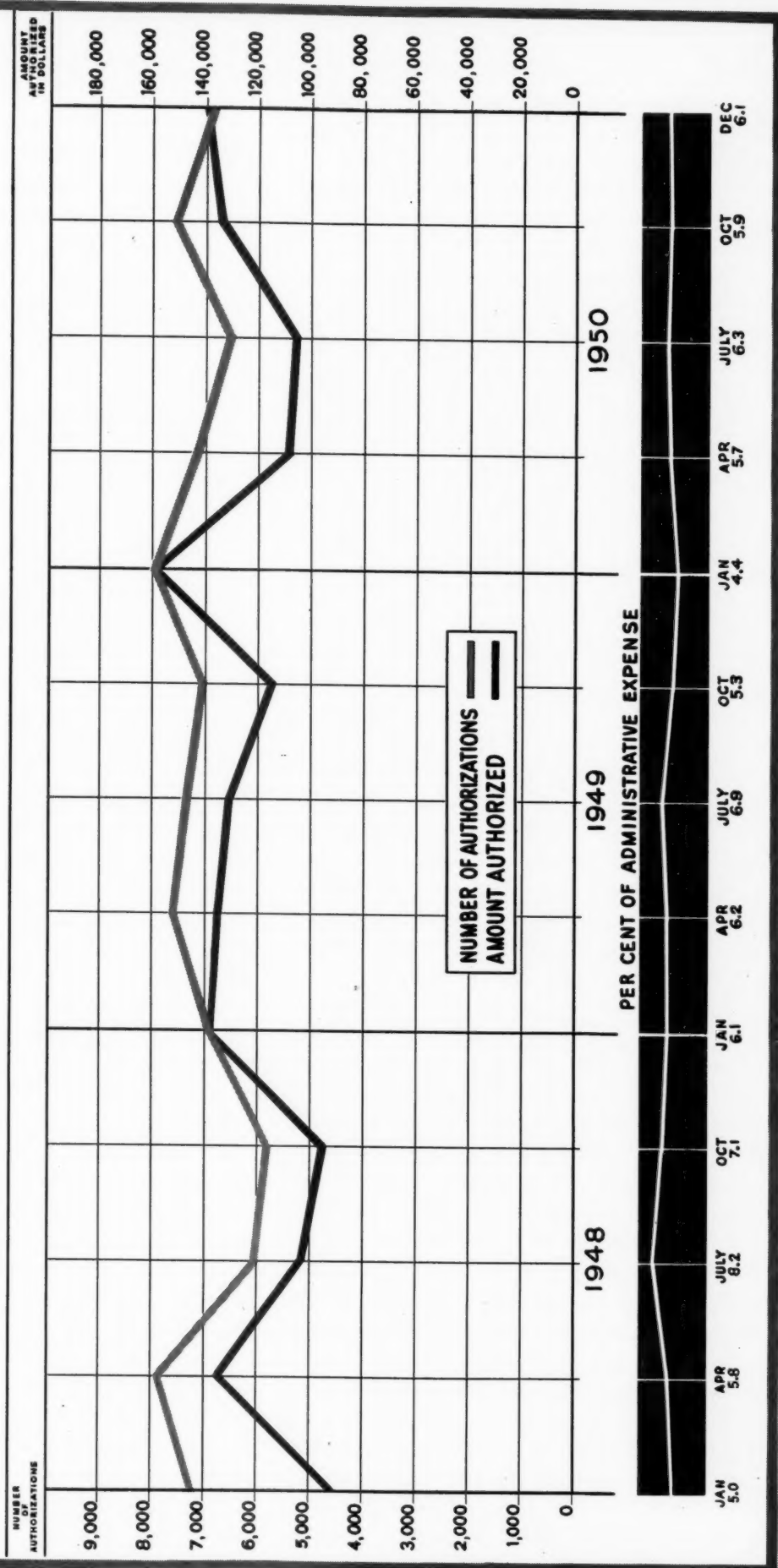
COMBINED GROWTH ALL PLANS



MICHIGAN MEDICAL SERVICE

VETERAN'S PROGRAM

JANUARY 1, 1948 TO DECEMBER 31, 1950



WITH FIRM AND REGULAR STEP

employment. Other programs include the enrollment of farmers through their Farm Bureaus, farmer co-operatives and the Farm Security Administration. A program for enrolling professional people is handled through such organizations as the Michigan State Medical Society, the Michigan State Dental Society, the Michigan State Bar Association and the Michigan State Pharmaceutical Association.

A program of Community Enrollment, conducted on a state-wide basis, makes the two services available to the self-employed and others who do not belong to established groups.

Michigan Medical Service was the first Blue Shield Plan to establish a special program for providing veterans with service-connected disabilities with "home-town" care. Through this program, thousands of veterans in Michigan have been able to go to their own physicians rather than to veterans' hospitals for examination or treatment. Michigan Medical Service, by arrangement with the Veterans Administration, pays the doctors for services to veterans in the same way it pays for services rendered to its regular subscribers. It is reimbursed by the Veterans Administration. This system has not only helped relieve the great pressure on the veterans' facilities, but has made it easier for the veterans to get the care they need.

Nationally, all Blue Shield Plans have leaned on Michigan Medical Service for statistics. For a long time Michigan Medical Service had the only actuarial statistics on prepayment that were to be had. Michigan Medical Service helped the other Plans, as well as the Blue Shield Commission, with personnel as well as advice.

Since March 1, 1940, when it was established, until March 1, 1951, Michigan Medical Service paid out for medical and surgical benefits to its members the total of \$58,158,228.90.

9

Today, more than one-third of all the men, women and children in Michigan are members of Blue Shield. A few months ago it won the special Blue Shield award for being the first Blue Shield Plan in the country to enroll two million members. Recently it added a \$5,000 yearly family income ceiling contract to the \$2,500 income ceiling contract it had been selling right along. The two contracts make it possible for the majority of the residents of Michigan to secure

medical and surgical coverage on a service benefits basis.

More than 82 per cent of Michigan's doctors have become participating doctors in the Plan.

There is no organized opposition. There is practically no opposition in the active sense.

Michigan Medical Service has become the doctors' credit agency for financing the sale of their services to all those who cannot conveniently pay for them either out of current income or savings.

Says Dr. Haughey:

"The profession has almost completely accepted Blue Shield and Blue Cross. There is little opposition without real justification even in Flint. The educational job has in good part been accomplished. It has been accepted by the profession as wholeheartedly as anything that has ever been presented to them."

Dr. L. Fernald Foster is an organization man and one whose talent and special business it is to keep his ear close to the ground. It is his opinion that "despite some gripes, the doctors are aware of the tremendous job they have done and are proud of it." About some of the problems disturbing relations between the doctors and the hospitals, he says, "If we can keep going long enough I think that the problems will solve themselves."

Looking back, the rise of Michigan Medical Service has a profound meaning not only to each doctor but to each citizen. If each profession, each social group, when confronted by a new problem, will meet the problem through the democratic processes of debate, adjustment and creative response, then democracy will survive. Should we fail, the problems will dictate their own solutions; they will, through the blind force of necessity, find their own mechanism for solving themselves. This mechanism will be the government. Those who would communize us by design have their blind and too often irrepressible accomplices in those who achieve the same end by default.

The doctors of Michigan have built not for themselves but for the nation, as the doctors of all the other states know.

And looking back, the efforts of the many men whose names are on the record, and the efforts of the many more men whose names are not on the record, become significant as parts of ourselves, parts of our own growth.



Future Home of BLUE CROSS — BLUE SHIELD



PICTURED above is the new home of the first Blue Shield Plan in the *World* to enroll 2,000,000 members—the Michigan Plan—*your* Plan, Doctor. The building, situated two blocks east of the new Detroit City-County Building, consists of five stories and a basement and has 132,546 square feet of floor space. This space is not only adequate for our present operation, but will also permit the necessary expansion required by

our continual growth. Michigan Medical Service expects to occupy the building jointly with Michigan Hospital Service sometime after April, 1953.

Looking forward to future occupancy, MMS in 1950 purchased a parking lot within one-half block of the new Home Office Building. This lot is large enough to provide ample parking facilities for both employees and visitors.

MSMS HOUSE OF DELEGATES—1951

Delegates and Alternates

(Names of Alternates appear in *Italics*)

ALLEGAN

L. F. Brown, M.D., 133 E. Allegan, Otsego
E. B. Johnson, M.D., 144 Brady, Allegan

ALPENA-ALCONA-PRESQUE ISLE

E. S. Parmenter, M.D., Alpena
H. J. Burkholder, M.D., Alpena State Savings Bank, Alpena

BARRY

A. B. Gwinn, M.D., City Bank Bldg., Hastings
Stewart Lofdahl, M.D., Nashville

BAY-ARENAC-IOSCO

O. J. Johnson, M.D., 207 N. Walnut, Bay City
W. S. Stinson, M.D., 101 W. John, Bay City
R. E. Fisher, M.D., 900 N. Jackson, Bay City
D. J. Mosier, M.D., 101 W. John, Bay City

BERRIEN

D. W. Thorup, M.D., 610 Fidelity Bldg., Benton Harbor
F. A. Rice, M.D., 318 N. Fourth, Niles

BRANCH

H. J. Meier, M.D., 87 W. Pearl, Coldwater
N. J. Walton, M.D., 61 E. Chicago, Quincy

CALHOUN

H. C. Hansen, M.D., 417 Post Bldg., Battle Creek
S. T. Lowe, M.D., 1009 Security Bank Bldg., Battle Creek
J. W. Hubby, M.D., 1407 Security Bank Bldg., Battle Creek
L. R. Keagle, M.D., 196 North Ave., Battle Creek

CASS

S. L. Loupee, M.D., Dowagiac
U. M. Adams, M.D., Marcellus

CHIPPEWA-MACKINAC

B. T. Montgomery, M.D., 309 Ashmun, Sault Ste. Marie
D. C. Howe, M.D., 300 Court, Sault Ste. Marie

CLINTON

F. W. Smith, M.D., Ovid
J. G. Kirker, M.D., Fowler

DELTA-SCHOOLCRAFT

W. A. LeMire, M.D., 1106 First Ave., Escanaba
A. H. Miller, M.D., 904 Wisconsin, Gladstone

DICKINSON-IRON

D. R. Smith, M.D., Iron Mountain
L. E. Irvine, M.D., 422 Third St., Iron River

EATON

G. C. Stucky, M.D., Charlotte
Paul Engle, M.D., Olivet

GENESEE

J. E. Livesay, M.D., 621 Mott Foundation Bldg., Flint
F. D. Johnson, M.D., 202 Paterson Bldg., Flint
C. W. Colwell, M.D., 706 Citizens Bank Bldg., Flint
L. M. Bogart, M.D., 1008 Genesee Bank Bldg., Flint
F. W. Baske, M.D., 923 Maxine St., Flint
F. A. Barbour, M.D., 1439 Mott Foundation Bldg., Flint
H. H. Hiscock, M.D., 1315 Mott Foundation Bldg., Flint
E. P. Vary, M.D., 608 First National Bldg., Flint

GOGEBIC

H. A. Pinkerton, M.D., Newport Hospital, Ironwood
A. C. Gorrilla, M.D., 210 S. Suffolk, Ironwood

GRAND TRAVERSE-LEELANAU-BENZIE

D. G. Pike, M.D., 876 E. Front, Traverse City
C. E. Lemen, M.D., 216½ E. Front, Traverse City

GRATIOT-ISABELLA-CLARE

M. G. Becker, M.D., Edmore
J. L. Rottschafer, M.D., Alma

HILLSDALE

L. W. Day, M.D., Jonesville
O. G. McFarland, M.D., North Adams

HOUGHTON-BARAGA-KEWEENAW

T. P. Wickliffe, M.D., 1167 Calumet Ave., Calumet
A. B. Aldrich, M.D., 325 Harris Ave., Houghton

HURON

C. W. Oakes, M.D., Harbor Beach
C. A. Scheurer, M.D., Pigeon

INGHAM

O. B. McGillicuddy, M.D., 1816 Olds Tower, Lansing
H. W. Wiley, M.D., 137 N. Larch, Lansing
F. L. Troost, M.D., 4341 W. Delhi, Holt
J. M. Wellman, M.D., 301 Seymour Ave., Lansing
E. J. Robson, M.D., 215 N. Walnut, Lansing
K. H. Johnson, M.D., 1116 Olds Tower, Lansing

IONIA-MONTCALM

W. L. Bird, M.D., Greenville
M. A. Hoffs, M.D., Lake Odessa

JACKSON

J. D. Van Schoick, M.D., Hanover
J. W. Rice, M.C., Commander USNR, Cecil Field, NAAS, Jacksonville, Fla.
E. H. Corley, M.D., 1211 W. Franklin, Jackson
G. L. Otis, M.D., 1405 National Bank Bldg., Jackson

KALAMAZOO

W. A. Scott, M.D., 252 E. Lovell, Kalamazoo
R. W. Shook, M.D., 611 American National Bank Bldg., Kalamazoo
R. J. Armstrong, M.D., 605 Hanselman Bldg., Kalamazoo
F. C. Ryan, M.D., 507 S. Burdick, Kalamazoo
A. F. DeGroat, M.D., 458 W. South St., Kalamazoo
W. B. Crane, M.D., 420 S. Rose, Kalamazoo

KENT

A. V. Wenger, M.D., Loraine Bldg., Grand Rapids
W. B. Mitchell, M.D., Medical Arts Building, Grand Rapids
J. W. Logie, M.D., Metz Building, Grand Rapids
L. C. Carpenter, M.D., Metz Building, Grand Rapids
G. W. DeBoer, M.D., 220 Medical Arts Building, Grand Rapids
A. A. VanSolkema, M.D., 953 E. Fulton, Grand Rapids
W. R. Torgerson, M.D., Metz Building, Grand Rapids
Torrance Reed, M.D., Ashton Building, Grand Rapids
S. L. Moleski, M.D., 528 Medical Arts Building, Grand Rapids
L. O. Grant, M.D., 420 Medical Arts Building, Grand Rapids
R. S. Van Bree, M.D., 204 Loraine Bldg., Grand Rapids
C. E. Farber, M.D., 408 Metz Building, Grand Rapids

MSMS HOUSE OF DELEGATES—1951

LAPEER

D. J. O'Brien, M.D., Lapeer
C. R. Zolliker, M.D., 240 Main, Imlay City

LENAWEE

R. E. Dustin, M.D., 309 N. Union, Tecumseh
G. H. Wynn, M.D., 147 E. Church, Adrian

LIVINGSTON

H. C. Hill, M.D., Howell
T. A. Barton, M.D., Howell

LUCE

M. A. Surrell, M. D., Newberry
T. W. Thompson, M.D., Newberry

MACOMB

Sydney Scher, M.D., 67 Cass Ave., Mt. Clemens
Oscar Stryker, M.D., Court House, Mt. Clemens

MANISTEE

E. C. Hansen, M.D., 78 Maple St., Manistee
L. W. Switzer, M.D., Manistee Savings Bank Bldg.,
Manistee

MARQUETTE-ALGER

N. J. McCann, M.D., First National Bank Bldg., Mar-
quette
A. S. Narotzky, M.D., Ishpeming

MASON

E. B. Boldyreff, M.D., Custer
A. F. Boon, M.D., Ludington

MECOSTA-OSCEOLA-LAKE

Paul Ivkovich, M.D., Reed City
G. H. Yeo, M.D., 126 Maple, Big Rapids

**MEDICAL SOCIETY OF NORTH CENTRAL
COUNTIES**

S. A. Stealy, M.D., Box 485, Grayling

MENOMINEE

J. R. Heidenreich, M.D., Daggett
J. N. De Wane, M.D., 1001 Sheridan, Menominee

MIDLAND

H. L. Gordon, M.D., Dow Chemical Co., Midland
H. H. Gay, M.D., Dow Chemical Co., Midland

MONROE

T. A. McDonald, M.D., 7 E. Front, Monroe
J. P. Flanders, M.D., 31 Washington, Monroe

MUSKEGON

N. W. Scholle, M.D., Anderson Building, Muskegon
Heights
R. D. Risk, M.D., 1160 Ransom, Muskegon
D. R. Boyd, M.D., 1735 Peck, Muskegon
Louis Le Fevre, M.D., 450 W. Western, Muskegon

NEWAYGO

J. P. Klein, M.D., 16 W. Sheridan, Fremont
B. L. Masters, M.D., 43 W. Main, Fremont

NORTHERN MICHIGAN MEDICAL SOCIETY

J. R. Rodger, M.D., Bellaire
Isaac Terr, M.D., Charlevoix

OAKLAND

P. E. Sutton, M.D., 629 Washington Square Build-
ing, Royal Oak
H. A. Furlong, M.D., 932 Riker Bldg., Pontiac
R. H. Baker, M.D., 1110 Peoples State Bank Bldg.,
Pontiac
J. M. Markley, M.D., 849 W. Huron, Pontiac
J. D. Green, M.D., 311 Wabeek Bldg., Birmingham
O. R. MacKenzie, M.D., 404 Pontiac Trail, Walled
Lake
E. B. Cudney, M.D., 216 Oneida, Pontiac
E. C. Rupp, Jr., M.D., 202 Crane, Royal Oak

OCEANA

M. G. Wood, M.D., Hart
W. G. Robinson, M.D., Hart

ONTONAGON

W. F. Strong, M.D., Ontonagon
H. B. Hogue, M.D., Ewen

OTTAWA

William Westrate, 11 W. 8th, Holland
D. C. Bloemendaal, M.D., 351 W. Michigan, Zeeland

SAGINAW

J. E. Manning, M.D., 112 N. Michigan, Saginaw
J. P. Markey, M.D., 628 Gratiot, Saginaw
J. W. MacMeekin, M.D., 1213 N. Michigan, Saginaw
J. W. James, M.D., 418 W. Genesee, Saginaw

SANILAC

James Cripps, M.D., Marlette
Neil Muir, M.D., Croswell

SHIAWASSEE

C. L. Weston, M.D., 1306 N. Washington, Owosso
C. J. Richards, M.D., Durand

ST. CLAIR

J. F. Beer, M.D., South Riverside Dr., St. Clair
W. H. Boughner, M.D., P.O. Box 286, Algonac

ST. JOSEPH

R. A. Springer, M.D., Klinger Lake, Sturgis
J. P. Sheldon, M.D., 104 S. Clay, Sturgis

TUSCOLA

L. L. Savage, M.D., Caro
H. L. Nigg, M.D., Caro

VAN BUREN

W. R. Young, M.D., Lawton
A. H. Steele, M.D., Paw Paw

WASHTENAW

O. K. Engelke, M.D., 720 E. Catherine, Ann Arbor
R. W. Teed, M.D., 215 S. Main, Ann Arbor
P. S. Barker, M.D., University Hospital, Ann Arbor
B. M. Harris, M.D., 220 Pearl, Ypsilanti
H. A. Miller, M.D., Saline
P. N. Brown, M.D., Ypsilanti State Hospital, Ypsilanti
A. N. Waldron, M.D., 1130 Hill, Ann Arbor
J. L. Wilson, M.D., University Hospital, Ann Arbor
V. M. Zerbi, M.D., 1711 Stamford, Willow Run

WAYNE

Arch Walls, M.D., 17201 W. McNichols, Detroit 19
E. D. Spalding, M.D., 10 Peterboro, Detroit 1
E. H. Fenton, M.D., 15125 Grand River, Detroit 27
J. J. Lightbody, M.D., 501 David Whitney Bldg., De-
troit 26
R. L. Novy, M.D., 858 Fisher Bldg., Detroit 2
K. B. Babcock, M.D., 4160 John R., Detroit 1
G. C. Penberthy, M.D., 1515 David Whitney Bldg.,
Detroit 26

MSMS HOUSE OF DELEGATES—1951

E. A. Osius, M.D., 901 David Whitney Bldg., Detroit 26
 F. A. Weiser, M.D., 4162 John R., Detroit 1
 W. W. Babcock, M.D., 868 Fisher Bldg., Detroit 2
 E. C. Texter, M.D., 7457 Gratiot, Detroit 13
 C. L. Candler, M.D., 20040 Mack Ave., Grosse Pointe Woods 30
 W. B. Cooksey, M.D., 62 W. Kirby, Detroit
 J. G. Molner, M.D., 334 Bates, Detroit 26
 Douglas Donald, M.D., 7815 E. Jefferson, Detroit 14
 D. C. Beaver, M.D., 432 E. Hancock, Detroit 1
 O. A. Brines, M.D., 1512 St. Antoine, Detroit 1
 C. I. Owen, M.D., 4160 John R., Detroit 1
 E. G. Krieg, M.D., 1842 David Whitney Bldg., Detroit 26
 C. D. Benson, M.D., 1515 David Whitney Bldg., Detroit 26
 R. A. Johnson, M.D., 7815 E. Jefferson, Detroit 14
 G. T. McKean, M.D., 1515 David Whitney Bldg., Detroit 26
 H. F. Dibble, M.D., 1313 David Whitney Bldg., Detroit 26
 W. S. Reveno, M.D., 951 Fisher Bldg., Detroit 2
 L. J. Bailey, M.D., 620 Vinewood, Birmingham
 R. F. Fenton, M.D., 15125 Grand River, Detroit 27

C. K. Hasley, M.D., 1429 David Whitney Bldg., Detroit 26
 L. T. Henderson, M.D., 13038 E. Jefferson, Detroit 14
 H. J. Kullman, M.D., VA Hospital, Dearborn
 M. A. Darling, M.D., 673 Fisher Bldg., Detroit 2
 D. I. Sugar, M.D., 13120 Broadstreet, Detroit
 W. L. Brosius, M.D., Harper Hospital, Detroit
 L. S. Fallis, M.D., Henry Ford Hospital, Detroit
 R. V. Walker, M.D., 1255 David Whitney Bldg., Detroit 26
 J. E. Lofstrom, M.D., 410 Kales Bldg., Detroit 26
 E. D. King, M.D., 5455 W. Vernor, Detroit 9
 D. H. Kaump, M.D., Providence Hospital, Detroit 8
 L. J. Morand, M.D., 641 David Whitney Bldg., Detroit 26
 E. A. Bicknell, M.D., 13641 Wyoming, Detroit 21
 L. R. Leader, M.D., 1129 David Whitney Bldg., Detroit 26
 H. B. Fenech, M.D., 324 Professional Bldg., Detroit 1
 A. H. Price, M.D., 62 W. Kirby, Detroit
 R. C. Rueger, M.D., 9149 E. Jefferson, Detroit 14
 H. F. Raynor, M.D., 1340 Macabees Bldg., Detroit 2
 Louis Jaffe, M.D., 1605 David Broderick Tower, Detroit 26
 H. E. Bagley, M.D., 12922 W. Warren, Dearborn
 M. L. Lichter, M.D., 2900 Oakwood Blvd., Melvindale
 D. A. Young, M.D., 14807 W. McNichols
 A. E. Price, M.D., 313 David Whitney Bldg., Detroit 26
 J. A. Witter, M.D., 344 Glendale, Detroit 3
 K. M. McColl, M.D., 18520 E. Warren, Detroit
 W. S. Carpenter, M.D., 1317 David Whitney Bldg., Detroit 26
 Sidney Adler, M.D., 872 Fisher Bldg., Detroit 2
 P. J. Waltz, M.D., 16127 Woodward, Detroit 3
 E. G. Cochrane, M.D., 12805 Hamilton, Detroit 3
 E. F. Dittmer, M.D., 14320 E. Jefferson, Detroit 15
 V. G. Chabut, M.D., 206 W. Dunlap, Northville
 Raphael Altman, M.D., 1052 Maccabees Bldg., Detroit 2
 J. A. Kasper, M.D., Bon Secours Hospital, Grosse Pointe 30
 E. H. Lauppe, M.D., 1650 David Whitney Bldg., Detroit 26
 E. F. Lutz, M.D., 13-204 General Motors Bldg., Detroit 2
 E. C. Long, M.D., 2626 Rochester, Detroit 6
 J. E. Croushore, M.D., 573 Fisher Bldg., Detroit 2
 S. A. Zukowski, M.D., 6626 Van Dyke, Detroit 13
 J. H. Schlemer, M.D., 13826 Dexter, Detroit 6
 Saul Rosenzweig, M.D., 2114 David Broderick Tower, Detroit 26
 J. D. Fryfogle, M.D., 655 Fisher Bldg., Detroit 2
 S. V. Goryl, M.D., 9953 E. Forest, Detroit 13
 J. E. Hauser, M.D., 671 Fisher Bldg., Detroit 2
 K. L. Swift, M.D., 869 Fisher Bldg., Detroit 2
 R. M. Athay, M.D., Wayne County General Hospital, Eloise
 B. A. Sage, M.D., 1013 Haigh, Dearborn
 C. S. Ratigan, M.D., 22276 Garrison, Dearborn
 N. D. McGlaughlin, M.D., 2312 Biddle, Wyandotte
 E. A. Wishropp, M.D., 227 Kenwood Ct., Grosse Pointe
 Max Blaine, M.D., 654 Maccabees Bldg., Detroit 2
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 R. G. Swanson, M.D., 936 Alter Rd., Detroit 15
 L. P. Heath, M.D., 1457 David Whitney Bldg., Detroit 26
 S. G. Murphy, M.D., 603 E. Forest, Detroit 1
 C. J. Williams, M.D., 15324 E. Jefferson, Detroit 30
 R. D. Tupper, M.D., 15101 W. Seven Mile, Detroit 19
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Michigan State Medical Society
86th Annual Session

Grand Rapids, September 26-27-28, 1951

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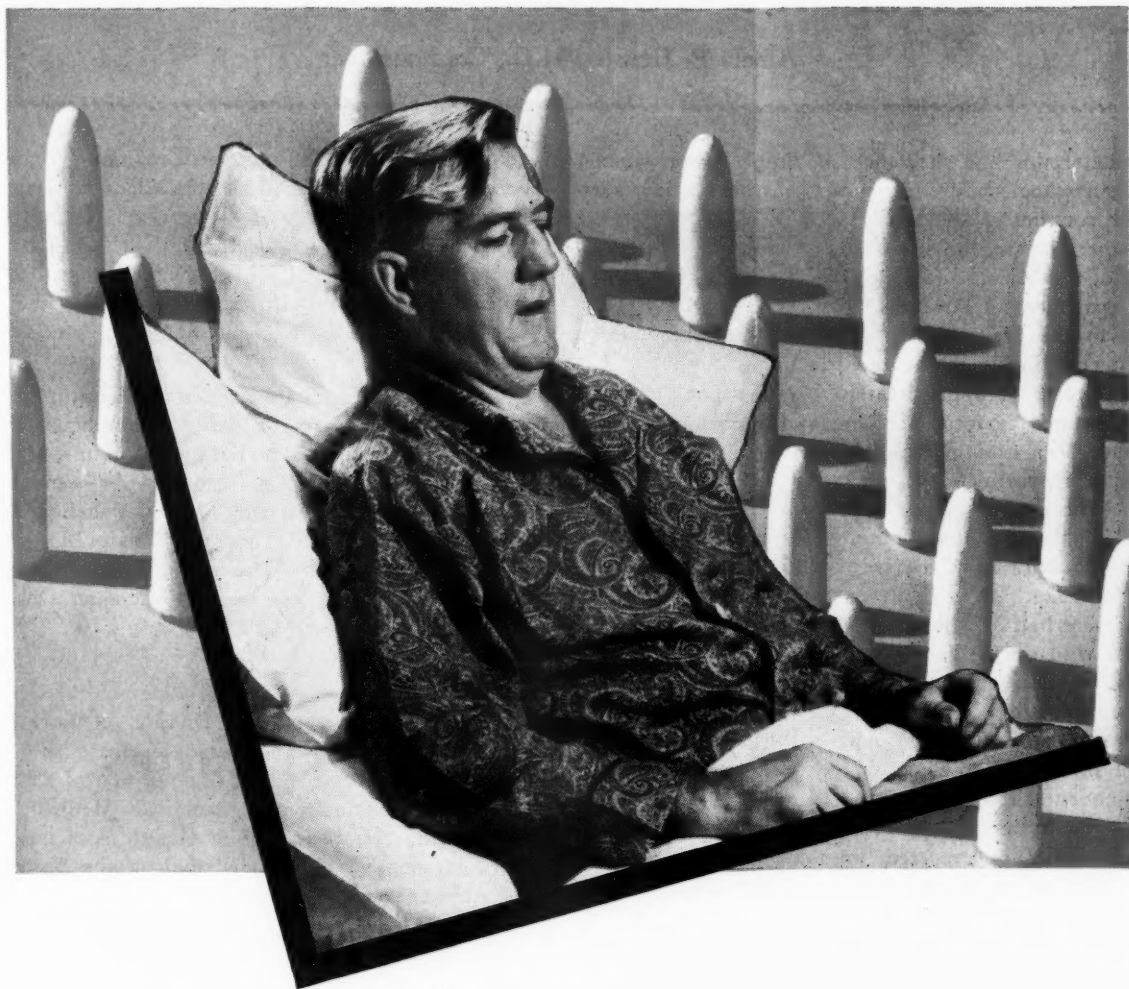
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Feinberg, S. M.: Asthma—Present Status of Therapy, Chicago M. Soc. Bull. 57:1062 (June 18) 1949.

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Michigan's Department of Health

Albert E. Heustis, M.D., Commissioner

To determine the incidence of simple goiter among Michigan school children, a survey has been undertaken in four counties of the state.

Co-operating in the study are the Iodized Salt Committee of the Michigan State Medical Society, the Michigan Department of Health, the Nutrition Advisory Committee to the State Health Commissioner, local health departments, local schools and practicing physicians.

The throats of approximately 70,000 school children in Houghton, Wexford, Midland and Macomb counties will have been examined by physicians employed by the Michigan Department of Health by the time school closes. The counties range from areas having the most iodine in ground water to those having the least. They are the counties in which the initial goiter survey was made in 1924. As a result of the initial study which showed that half of Michigan children of school age were affected with simple goiter, the Michigan State Medical Society, the Michigan Department of Health and the salt manufacturers co-operated in placing iodized salt on Michigan's grocers' shelves and advocating its use for control of simple goiter.

Subsequent survey indicated that the use of iodized salt was controlling the incidence of simple goiter. The current survey is expected to show whether or not goiter is being controlled at the present time.

A series of seven leaflets dealing with the introduction of new foods in the infant's diet has just been released by the Michigan Department of Health and is available to physicians of the state.

The infant feeding series covers food sources of vitamin C, fruits, vegetables, cereals, meats, eggs and simple desserts. Each one-page leaflet contains practical suggestions on the preparation of one food for addition to the infant's milk diet. Each has space for the physician's notes. The leaflets are designed to be given to mothers one at a time, as the particular food is to be added to the infant's diet.

The leaflets have the approval of the Child Welfare Committee of the Michigan State Medical Society. Supplies of the leaflets can be secured from the local health departments or from the Section of Nutrition of the Michigan Department of Health.

Dr. Pearl Kendrick, internationally known for her work in developing a whooping cough vaccine, has been granted leave of absence from the Michigan Department of Health to become a resident lecturer in the School of Public Health, University of Michigan. She will teach public health laboratory practice in the Department of Epidemiology of the School of Public Health of the University beginning with the fall term.

Dr. Kendrick, an Associate Director of the Division of Laboratories, has been in charge of the Western Michigan Section of the Laboratories (Grand Rapids) since it

was established in 1926. She will maintain a continuing professional relationship with the Michigan Department of Health while on leave.

Dr. Kendrick recently completed two world health organization assignments—in England and in Colombia, Chile and Brazil—to help laboratories solve their problems in production of whooping cough vaccines.

While the Michigan Department of Health, because of budget restrictions, was unable to conduct a ragweed pollen survey in the state last year, a summary of the preceding five years pollen incidence has been compiled. It will be published in the (May) Vacation Issue of *Michigan Public Health* and reprinted for the assistance of those who seek haven from pollen in Michigan. For copies of the reprint address the Michigan Department of Health, Lansing 4, Michigan.

Dr. Fanny Kenyon, Associate Chief of the Section of Maternal and Child Health, Division of Local Health Administration, has been elected Delegate at Large to the National Health Council, organization of 29 national health groups including the American Medical Association and the American Public Health Association. Dr. Kenyon is national safety chairman of the Business and Professional Women's Clubs.

John Hepler, Director of the Division of Engineering of the Michigan Department of Health, is the new president of the Michigan Engineering Society.

Requests for health education films from the Film Loan Library of the Michigan Department of Health continually increase. Some requests for the use of films are received a year in advance of the showing date. The showing during the first two months of 1951 drew 19,000 more viewers than during the same months a year earlier. Almost 69,000 Michigan people saw films from the Michigan Department of Health in 1,223 showings during February.

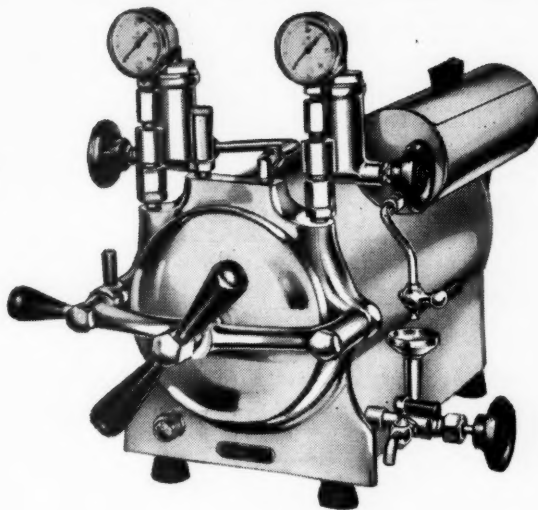
Services of the Michigan Department of Health's Vision and Hearing Consultants are now being scheduled for the school year 1951-52. Schools or Boards of Education which wish the services should contact their local health departments.

Short courses to train locally employed persons to do initial vision or hearing screening will be held during the summer, through the co-operation of the teachers training institutions and the Michigan Department of Health.

E. J. Fatchett has been appointed acting director of the Lenawee County Health Department to serve until a full-time medical director has been appointed.

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The new, fast Pelton FL-2 is a scientifically-designed, precision-built autoclave. It uses the exact safe, fast principles of large hospital sterilizers: double boiler, air discharge valve, reservoir-condenser to convert steam to distilled water for re-use in boiler (no steam discharge in room), solid bronze safety door, positive door lock and safety catch, fully automatic.

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NEWS MEDICAL

MICHIGAN STATE MEDICAL SOCIETY ANNUAL SESSION GRAND RAPIDS—September 26-27-28, 1951

DON'T MISS de KRUIF'S DOCTOR ARTICLE.—Paul de Kruif has a fine article, entitled "Your Doctor for a Friend," appearing in the May issue of the *Reader's Digest*. The article discusses the doctor-patient relationship, praises the medical profession for taking the initiative in setting up grievance committees and emergency night-call systems, and tells how the patient can help his doctor.

Reprints are being made available by our Department of Public Relations to state medical societies in quantities up to 500 for distribution through county medical societies.

—From AMA Secretary's Letter No. 180 of April 30, 1951.

MSMS ANNUAL SESSION

General Chairman: J. Duane Miller, M.D.,
Grand Rapids

Chairman of Scientific Press Relations Committee:
C. A. Payne, M.D., Grand Rapids

Chairman of House of Delegates Press Relations
Committee: J. E. Livesay, M. D., Flint

The American Academy of General Practice study requirements are 200 hours every three years, 150 of which can be made up by attendance at national, state, and local medical society scientific meetings and regular hospital staff clinical sessions; the remaining fifty hours must be for attendance at formal study courses.

Sixteen average hour credits will be given for attendance at the Michigan State Medical Society Annual Session, September 26-27-28, 1951; 12 for attendance at the Michigan Postgraduate Clinical Institute, March 12-13-14, 1952.

Maj. Gen. George Ellis Armstrong, who was guest speaker at the MSMS County Secretaries Conference on January 21, 1951, in Detroit, was recently nominated by President Truman to be Surgeon General of the Army. Congratulations, General Armstrong.

Arthur C. Curtis, M. D., Ann Arbor, Loren W. Shaffer, M.D., Detroit, and Udo J. Wile, M.D., Ann Arbor, et al are authors of an original article "Penicillin Treatment of Syphilis" which appeared in JAMA of April 21, 1951.



Harry J. Loynd was elected President of Parke, Davis & Co., Detroit, on April 3, 1951, succeeding A. W. Lescohier, M.D., who retired from the post held since March, 1938.

Mr. Loynd, fifty-three, has been Vice President in charge of Domestic and Canadian Sales and Promotion since June, 1945.

Directors of the eighty-five-year-old company also elected Homer C. Fritsch as Executive Vice President, a new post, and Graydon L. Walker to Director of U. S. and Canadian Sales.

Dr. Lescohier will continue to serve on the Parke, Davis Board of Directors. Nathan T. Viger, Vice President, will remain as Chairman of the Executive Committee, Cleveland Thurber, Vice President, will serve as Vice Chairman, and Mr. Fritsch will act as Secretary.

* * *

J. S. DeTar, M.D., Milan, was elected Speaker of the Congress of Delegates of the American Academy of General Practice at its San Francisco Assembly March 20. He becomes a member of the Board of Directors of the Academy. Another Michigan member of the Board, who served as its Chairman the past year, is Arch Walls, M.D., of Detroit.

* * *

President C. E. Umphrey, M.D., Detroit, was toastmaster at the Annual Banquet of Wayne University Alumni Clinic Day, May 9, 1951.

* * *

G. W. Slagle, M.D., Battle Creek, was guest speaker at the Annual Meeting of the Michigan Tuberculosis Association in Marquette on May 19. His subject was "Your Doctor and Freedom."

* * *

Home Nurse Training Program.—The Rural Medical Service Committee of the Michigan State Medical Society urges all private employers of nursing personnel to co-operate with the American Red Cross Home Nurse Training Program to the extent of granting one week's leave of absence for the purpose of becoming instructors in said program, and also to the end that a

(Continued on Page 670)

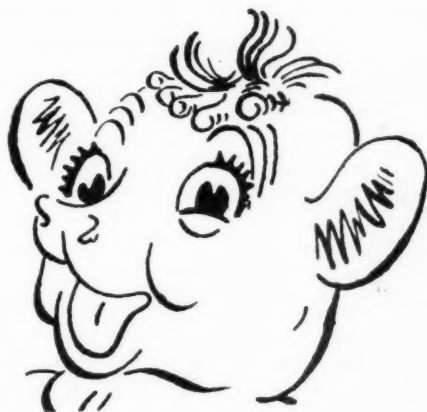
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minimum fat content, low calorie count,
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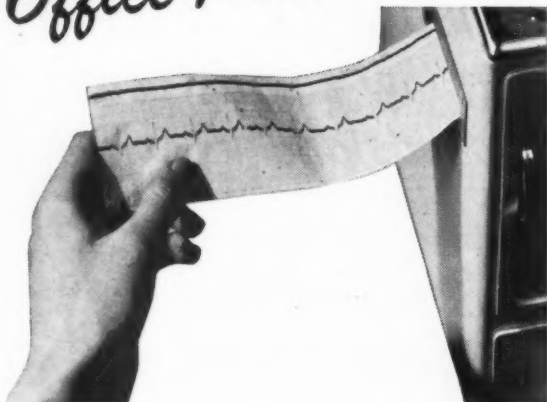
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complete proteins,
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much better flavor!
Extra vitamins, too--
2000 units of A and
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to each quart.*

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good! That's really
something!*



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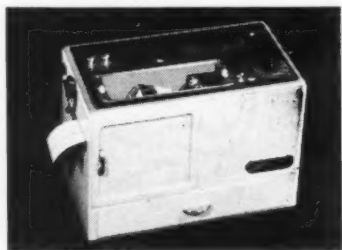
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(Continued from Page 668)

maximum recruitment of home nurses might be obtained. A special supplement to the American Red Cross Course now relates to Civil Defense. Individual doctors of medicine will gain much of value to themselves and to their patients by following the above recommendation.

* * *



E. H. Fenton, M.D., Detroit, newly elected secretary of the Wayne County Medical Society, was chosen to head the county secretaries of Michigan for the ensuing year. Dr. Fenton will be in charge of the Annual County Secretaries Conference to be held at the Book-Cadillac Hotel, Detroit, on Sunday, January 20, 1952.

* * *

Emergency Doctor Call System.—Medical societies in 329 communities of the nation have established night and emergency call systems—to guarantee that the people of the community can obtain a doctor at any time of the day or night, any day in the year, according to Louis H. Bauer, M.D., of Hempstead, New York, Chairman of the AMA Board of Trustees.

Dr. Bauer urges all county medical societies that have not yet established a formal plan for answering night and emergency calls to make this important service a major project during the next few months.

* * *

L. J. Garipey, M.D., Detroit, was guest speaker at the 71st Annual Meeting of the Louisiana State Medical Society in New Orleans, May 8. His subject was "Non-Traumatic Rupture of the Common Duct."

* * *

Arthur M. Hume, M.D., ninety-one, of Owosso, the oldest living graduate of Wayne University, was one of the five recipients of the newly created Wayne University Alumni Awards, granted by Wayne on May 5 and presented by President David B. Henry. Dr. Hume, a graduate of 1881, has been practicing in Owosso since 1883. Dr. Hume is a Past President of the Michigan State Medical Society, a former Mayor of Owosso, former Chief Surgeon of the Ann Arbor Railroad, Past President of the Owosso Board of Education and for ten years a member of the Michigan State Board of Registration in Medicine. Dr. Hume is still practicing medicine in his home town.

* * *

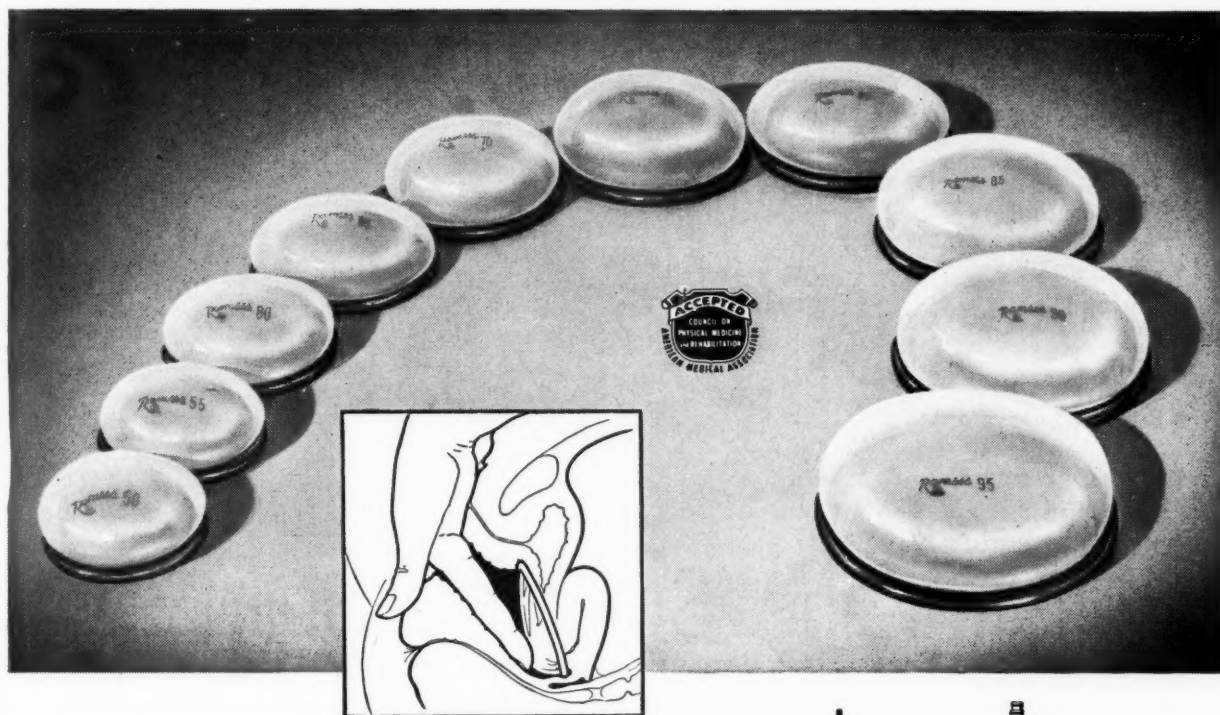
A. C. Furstenberg, M.D., Ann Arbor, was named General Chairman of the 1951 "Fifth" Annual Michigan Rural Health Conference at a meeting of forty-one sponsors held in Lansing, February 19.

The Michigan Foundation for Medical and Health Education, through its President E. I. Carr, M.D., Lans-

(Continued on Page 672)

Dependable Protection

Depends on Correct Fitting



Only 47.1 per cent of patients can be fitted with a size 70 or 75 diaphragm¹ (the most commonly prescribed sizes).

About 28 per cent are fitted with sizes 80 and 85, and 18 per cent with sizes 60 and 65.¹

Thus, the need for correct fitting and a wide range of diaphragm sizes is evident. A diaphragm which is too small or too large will not block access to the cervix along the anterior wall.²

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The "RAMSES" Diaphragm is intended for use with "RAMSES" Vaginal Jelly to provide optimum protection for the patient.

1. Clark, Le M.: The Vaginal Diaphragm. St. Louis, C. V. Mosby Company, 1938; p. 43.
2. Dickinson, R. L.: Techniques of Conception Control. Baltimore, Williams & Wilkins Company, 1950; p. 17.



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Unretouched photomicrograph of the dome (enlarged 10 diameters) and the rim (inset) of a conventional-type diaphragm.

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(Continued from Page 670)

ing, offered again to be financial sponsor of the Conference, to be held in October, 1951.

The Michigan Health Council, through its President J. S. DeTar, M.D., Milan, and its Executive Secretary E. H. Wiard, of Lansing, will implement the plans of the Committee on Arrangements for the 1951 Michigan Rural Health Conference.

The Kent County Medical Society and eighteen city and county health groups sponsored a panel presentation on the sex offender in Grand Rapids, on April 4. The program was planned for the sponsors by the Michigan Health Council which presented similar presentations before other Michigan counties last autumn.

The American Foundation of Occupational Health took over, as of May 1, the evaluation and approval of medical services in industry conducted by the American College of Surgeons for the past twenty years. The Foundation's Board will include three representatives each from the Industrial Medical Association and from the donors of the project; two each from outstanding business executives; and one each from the American College of Surgeons, the American College of Physicians, the American Medical Association, the American Academy of Occupational Medicine, the Association of American Medical Colleges, the Association of American Schools of Public Health, and the Industrial Hygiene Foundation.

Gaylord R. Hess, M.D., who has been in charge of

the activity for the American College of Surgeons, will continue to direct it for the American Foundation of Occupational Health.

The Pan-Pacific Surgical Association's Fifth Congress will be held in Honolulu November 7-19, 1951. For program and information write President F. J. Pinkerton, M.D., Suite 7, Young Building, Honolulu 13, T.H.

Michigan's Foremost Family Physician, Lunette I. Powers, M.D., Muskegon, was featured in the *Journal of the American Medical Women's Association*, May, 1951, Number. A full-page eulogy, with photograph of Dr. Powers, was written by Marcelle Bernard, M.D., of New York City, Editor of "News of Women in Medicine."

The American Congress of Physical Medicine will hold its twenty-ninth Annual Scientific and Clinical Session at the Shirley-Savoy Hotel, Denver, September 4-5-6-7-8, 1951. For information and program, write the Congress at 30 N. Michigan Ave., Chicago 2, Illinois.

The National Society for Crippled Children and Adults announces that a cerebral palsy workshop will be conducted at Michigan State Normal College, Ypsilanti, and that National Society program consultants will lecture at training courses to be held at Wayne

(Continued on Page 674)



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(Continued from Page 672)

University, Detroit, and Western Michigan College of Education, Kalamazoo.

For additional information write the Society at 11 South La Salle St., Chicago 3.

* * *

Eli Lilly and Company announces the completion of a 204-foot three-story extension wing of the Lilly Research Laboratory. This is the fourth addition since 1934 and doubles the Laboratory facilities of the Company. The scientific division has grown from one pharmacist and helper in 1894 to a staff of 532 people.

* * *

Mark Marshall, M.D., Ann Arbor, was MSMS representative at the April 23 Conference on Rehabilitation of Older Handicapped Workers, held at the Rackham Center, Ann Arbor.

* * *

Otto T. Mallery, Jr., M.D., has been appointed Director of the University of Michigan's new Institute of Industrial Health, made possible by a recent \$1,500,000 gift from General Motors Corporation.

* * *

The Foundation of the American Society of Plastic and Reconstructive Surgery, Inc. offers junior and senior awards for original contributions in plastic surgery. The winning essays will appear on the program of the Society's Annual Meeting to be held in Colorado Springs, October 31-November 2. For full particulars write the Award Committee, 11 E. 68th St., N. Y. 21, N. Y.



Rest in the Modern Method of Treatment in Tuberculosis—"With or without the benefits of modern thoracic surgery and chemotherapy, rest—absolute bed rest—graduated through to an active daily life, is still an essential part of tuberculosis treatment."—GROVER C. BELLINGER, M.D., president, American Trudeau Society.

MICHIGAN TUBERCULOSIS ASSOCIATION

C. L. Candler, M.D., Detroit, was recently elected President of the Downtown Optimist Club, Detroit. Dr. Candler is a Past President of the Wayne County Medical Society.

* * *

John M. Hammer, M.D., Kalamazoo, addressed the St. Joseph County Medical Society in Centerville, on April 10. His subject was "Medical Problems of Atomic Warfare."

* * *

Arthur A. Humphrey, M.D., Battle Creek, spoke on "Atomic Energy and Medicine's Role in Atomic Warfare" before the Eaton County Medical Society in Charlotte on April 25.

(Continued on Page 676)

Meat . . . in the Low-Sodium Diet

Clinical experience^{1,2} and investigative data³ indicate that the liberal use of meat may not be contraindicated when sodium intake must be restricted. Because unsalted meat contains only relatively small amounts of sodium, while contributing importantly to other nutrient needs, meat deserves special consideration in very-low-sodium diets, in sodium-poor diets, and in no-extra-sodium diets.

Table I lists the amounts of sodium³ in three kinds of meat. Table II gives the estimated amounts of sodium in hospital diets planned for cardiorenal vascular patients.⁴

SODIUM IN MEAT³

	Sodium Provided by 60 Gm. Serving	Sodium Provided by 100 Gm.
Beef, without bone	32 mg.	53 mg.
Lamb, without fat	66 mg.	110 mg.
Pork, without fat	35 mg.	58 mg.

Table I

SODIUM IN HOSPITAL DIETS⁴

Sodium-Poor Diets*				Very-Low-Sodium Diet†
40 Gm. Protein	70 Gm. Protein	100 Gm. Protein	130 Gm. Protein	70 Gm. Protein
400 mg. Na	500 mg. Na	800 mg. Na	1,000 mg. Na	200 mg. Na

Table II

*Foods prepared and served without salt.

†Weighed diet. May contain 4 oz. of unsalted meat.

(Normal diets contain approximately 4 Gm. of sodium daily.)

Hence, the data here shown indicate that relatively generous amounts of meat may be included in low-sodium diets.

Meat serves well in the therapeutic objective of maintaining a high state of nutrition in patients with congestive heart failure or nephritic edema by providing valuable amounts of biologically complete protein and of B complex vitamins, including the recently discovered B₁₂.

1. Wheeler, E. O.; Bridges, W. C., and White, P. D.: Diet Low in Salt (Sodium) in Congestive Heart Failure, J.A.M.A. 133:16 (Jan. 4) 1947.

2. Wohl, M. G., and Schneeberg, N. G.: Dietotherapy (Cardiovascular Disease), in Jolliffe, N.; Tisdall, F. F., and Cannon, P. R.: Clinical Nutrition, New York, Paul B. Hoeber, Inc., 1950, chap. 27.

3. Bills, C. E.; McDonald, T. C.; Niedermeier, W., and Schwartz, M. C.: Survey of the Sodium and Potassium Content of Foods and Waters by the Flame Photometer, Fed. Proc. 6:402 (Mar.) 1947.

4. Mayo Clinic Diet Manual, Philadelphia, W. B. Saunders Company, 1949, p. 113.

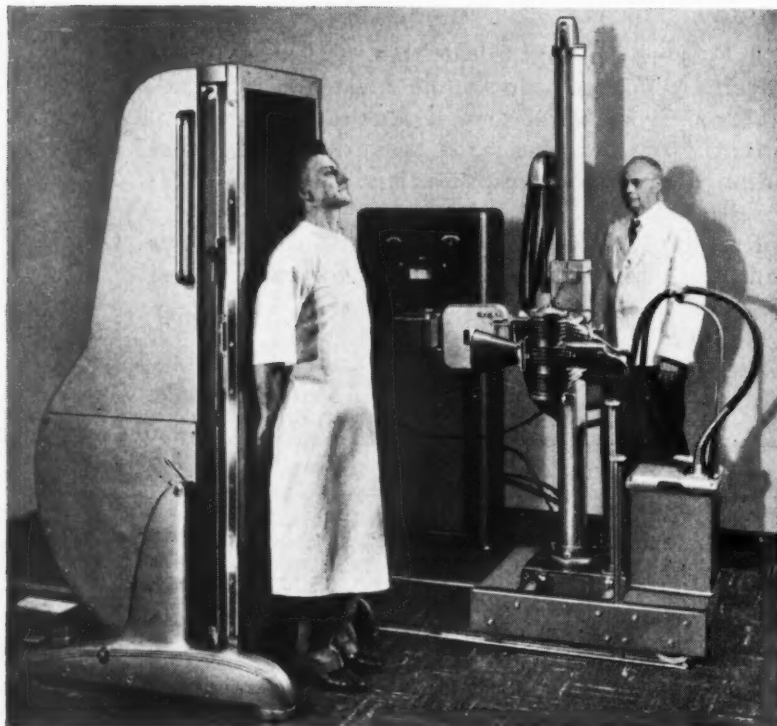
The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.



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WAYNE UNIVERSITY MEDICAL ALUMNI CLINIC DAY

The sixty-fifth annual session of the Wayne University Medical Alumni Clinic Day was held at the Fort Shelby Motel, Detroit, May 9, 1951. Several hundred were in attendance, and over two hundred attended the annual banquet for class reunions and presentations of honors. An excellent program was presented as follows:

Emergency Treatment Symposium on Trauma

GREATER DETROIT REGIONAL COMMITTEE ON TRAUMA.

"Injuries to the Head"

JOHN E. WEBSTER, M.D., Grace Hospital

"Modern Treatment of Burns"

C. JACKSON FRANCE, M.D., Memorial Hospital

"Injuries to the Rectum"

DON W. McLEAN, M.D., Grace Hospital

"Subphrenic Abscess"

DUNCAN A. CAMERON, M.D., Grace Hospital

"Observation on Gastrointestinal Gas"

WALTER G. MADDOCK, M.D., Chicago, Illinois

"Radioactive Iodine in Treatment of Hyperthyroidism"

WILLIAM M. McCONAHEY, M.D., Rochester, Minn.

"The Use of Hormones in Obstetrics and Gynecology"

JACOB P. GREENHILL, M.D., Chicago, Ill.

"The Management of Allergic Conditions in Infancy and Childhood"

ARTHUR J. HORESH, M.D., Cleveland, Ohio

"Carcinoma of the Breast"

CARL W. EBERBACH, M.D., Milwaukee, Wisconsin

"Cerebral Apoplexy, Diagnosis and Treatment"

RUDOLPH JAEGGER, M.D., Philadelphia, Pennsylvania
Annual Banquet—Coral Room.

Toastmaster—CLARENCE E. UMPHREY, M.D., President of Michigan State Medical Society.

"The Commissioner Reports to the Doctors"

Guest Speaker—DONALD S. LEONARD, L.L.D., Commissioner of Michigan State Police.

This was the reunion year of the classes ending in 1 and 6, and most of those classes were represented. The class of 1901 was honored by the golden anniversary scroll. One member, Wm. E. Acker of Monroe, was ill in the hospital. Robert J. Baskerville, of Miami, Florida, James A. Elliott of Long Beach, California, and Frederick J. Hackney, Centralia, Washington, sent messages. Those present were: Parker S. Bishop, Delta, Ohio; Julius C. Clippert, Dearborn; Louis C. Kent, Manchester; and Allan W. McDonald, Detroit. The wives were also present to enjoy the felicitations.

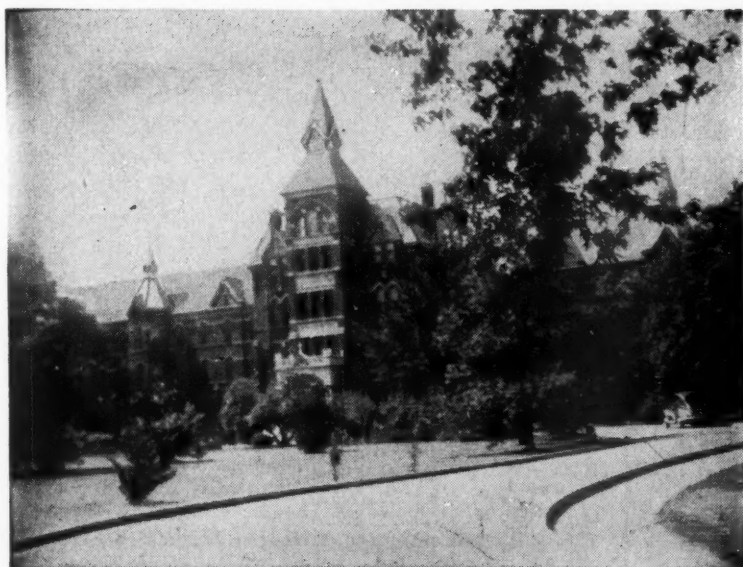
The papers were most outstanding, and the program a marked success.

BLUE CROSS-BLUE SHIELD COMMISSIONS CONFERENCE

The 1951 annual conference of the Blue Cross and Blue Shield Commissions was held in Biloxi, Mississippi, beginning Sunday evening, April 15, with a cafeteria style banquet with 720 guests. Mammoth shrimp was

(Continued on Page 678)

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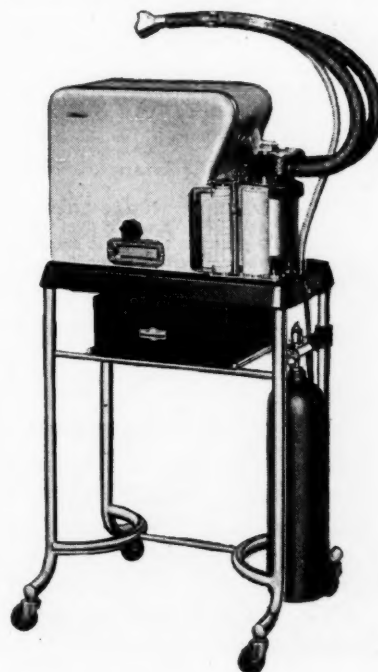
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Surgical Technique, Surgical Anatomy and Clinical Surgery, four weeks, starting July 9, August 6, September 10.
Surgical Anatomy and Clinical Surgery, two weeks, starting July 23, August 20, September 24.
Surgery of Colon and Rectum, one week, starting September 17, October 15.
Esophageal Surgery, one week, starting October 15.
Thoracic Surgery, one week, starting October 8.
Gallbladder Surgery, ten hours, starting October 22.
Breast and Thyroid Surgery, one week, starting October 1.
Fractures and Traumatic Surgery, two weeks, starting October 8.
GYNECOLOGY—Intensive Course, two weeks, starting September 24, October 22.
Vaginal Approach to Pelvic Surgery, one week, starting September 17, November 5.
OBSTETRICS—Intensive Course, two weeks, starting September 10, November 5.
MEDICINE—Intensive General Course, two weeks, starting October 1.
Gastroenterology, two weeks, starting October 15.
Gastroscopy, two weeks, starting July 16.
Electrocardiography and Heart Disease, two weeks, starting July 16.
Liver and Biliary Diseases, one week, starting September 17.
PEDIATRICS—Cerebral Palsy, two weeks, starting July 9.
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(Continued from Page 676)

the piece de resistance. The business of the conference opened on Monday, April 16. The morning sessions were devoted primarily to business. In the afternoon, the conferences were divided into numerous discussion groups. Michigan men were prominent in the discussions in these various groups. L. Fernald Foster, M.D., Secretary of the Michigan State Medical Society and a member of the Board of Michigan Medical Service, spoke on "The Demand for Higher Income Ceilings for Service Benefits." C. D. Moll, M.D., Medical Director of MMS, talked on "Fee Schedules." Jay C. Ketchum, Executive Director of MMS, gave a progress report on the National Blue Shield Service, Inc. On April 18, one of the discussion periods was "Some Special Medical Problems as They Affect Blue Shield Plans." J. S. DeTar, M.D., Chairman of the Liaison Committee of American Academy of General Practice and a member of the Board of MMS, told of the "Services of the General Practitioner." D. H. Kaump, M.D., Chairman of the Liaison Committee of the College of American Pathologists, talked about "The Growing Importance of Clinical Pathology."

Jay C. Ketchum discussed "Alternate Subscriber Certificates with Choice of Income Ceilings." Waldo Stoddard, Treasurer of the Michigan Medical Service, spoke of "Some Criteria for Sound Investments."

Wm. S. McNary, Executive Director of Michigan Hospital Service and President of the Blue Cross Commission, presided at the session. The conferences closed with a delicious steak dinner, with entertainment and the waiters marching into the dining room to a stirring band accompaniment.

* * *

Competitive examinations for the appointment of officers as Sanitary Engineers in the Regular Corps of the United States Public Health Service will be held on August 6, 7, and 8, 1951. Examinations will be held at a number of points throughout the United States, located as centrally as possible in relation to the homes of the candidates. Applications must be received *no later than July 9, 1951.*

The Regular Corps is a commissioned officer corps composed of members of various medical, technical, and scientific professions.

* * *

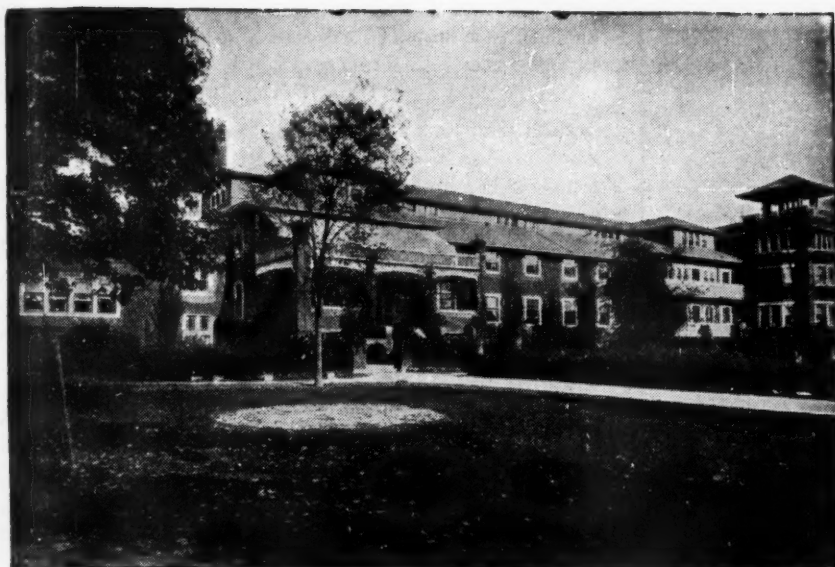
Dr. Osborne A. Brines, Professor of Pathology at Wayne University College of Medicine, has been elected to the position of Vice President of the International Society of Clinical Pathology.

Dr. Brines will attend the International Congress of Clinical Pathology in London, England, on July 16 to 20, 1951, as official delegate of the American Society of Clinical Pathologists.

* * *

John M. Hammer, M.D., of Kalamazoo, addressed the St. Joseph County Medical Society, April 10, at Centreville, Michigan, on the "Medical Problems of Atomic

(Continued on Page 680)



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JUNE, 1951

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(Continued from Page 678)

Warfare." Arthur A. Humphrey, M.D., of Battle Creek, gave a similar talk to the Eaton County Medical Society at Charlotte on April 24.

* * *

The U. S. Atomic Energy Commission has announced that it awarded fourteen new unclassified research contracts, including six in biology and medicine and eight in physical research, during the month of March. During the same period the Commission also renewed ten existing contracts in biology and medicine and nine in physical research.

Among the new contracts in biology and medicine are:
Michigan State College: Investigators—Drs. R. U. Byerrum and C. D. Ball. Title—Transmethylation in Plants. Duration—To June 30, 1952.

University of Michigan: Investigator—Dr. James V. Neel. Title—The Estimation of the Rate of Mutation of Certain Human Genes. Duration—To April 30, 1952.

University of Michigan: Investigators—Drs. R. L. Kahn and F. T. Hodges. Title—Universal Serological Reaction Following Irradiation. Duration—To June 30, 1952.

The renewals in biology and medicine are:

University of Michigan: Investigators—Drs. H. J. Gomberg and F. J. Hodges. Title—High Resolution Detection of Radioactive Isotopes. Duration—To January 14, 1952.

Renewals in physics:

University of Michigan: Investigator—Dr. H. Crane. Title—42-inch Cyclotron Program. Duration—To January 31, 1952.

* * *

MICHIGAN AUTHORS

George L. Waldbott, Detroit, published an article, "Treatment of Bronchiectasis" in *Postgraduate Medicine*, April, 1951.

H. D. Ireland, M.D., Grand Rapids, published an article, "Tuberculosis Problems in Kent County, Michigan," in *The Journal Lancet*, April, 1951.

Max K. Newman, M.D., Detroit, published an article "Multiple Sclerosis" in *The American Journal of Occupational Therapy*, September-October, 1950.

Henry J. Gomberg, M.D., Ann Arbor, published an article, "What Is Radiation?" in *Industrial Medicine and Surgery*, April, 1951.

William C. Parkinson, Ann Arbor, published an article, "Sources of Radiation," in *Industrial Medicine and Surgery*, April, 1951.

Carey P. McCord, M.D., Detroit, published an article, "The Porphyrins—The Significance of Porphyrins in Occupational Diseases," in *Industrial Medicine and Surgery*, April, 1951.

Louis J. Garipey, M.D., Detroit, presented a paper, "Non-Traumatic Rupture of the Common Duct," Tuesday, May 8, 1951, at the Seventy-first Annual Meeting of the Louisiana State Medical Society.

Industrial Medicine and Surgery, May, 1951, contains the following papers:

"One Hundred Problem People—A Study of Accident Frequency, Medical Complaints, Absenteeism, and Dis-

NEWS MEDICAL

disciplinary Penalties in a Manufacturing Industry," by Gordon A. Eadie, M.D., of Detroit.

"Medical Applications of Radiations and Radioactivity," by Isadore Lampe, M.D., University of Michigan, Ann Arbor.

"Science Miniature-Coverall Dermatitis," by Carey P. McCord, M.D., Detroit.

MORTALITY RATE OF WOUNDED IN KOREA LOWER THAN THAT IN ANY OTHER WAR

Fewer wounded American soldiers in Korea are dying after they reach medical care than in World War II, said Colonel Lawrence A. Potter of the Army Surgeon General's Office in an article published in the current Practical Pharmacy edition of the *Journal of the American Pharmaceutical Association*. He said that the exact statistics will not be known until after the Korean operation is over, but that it now appears definite that the mortality rate of wounded soldiers is less than 2.5 per cent as compared to 4 per cent in World War II. In World War I the rate was about 8 per cent.

The article, entitled "What Medicine Has Learned in Korea," is the most comprehensive report of the full Korean medical experience yet released. Col. Potter first presented this report before the convention of the American Pharmaceutical Manufacturers' Association in Boca Raton, Florida.

The lowered mortality rate of wounded is attributed, in part, to the increased number and further uses of the antibiotics, such as penicillin, chloromycetin, aureomycin, streptomycin, and terramycin. Penicillin was the only one of these available during World War II, and it was not available throughout the entire Army medical system until late in the war.

The transfusion of whole blood, first used in the last war, is also a contributing factor to the lowered mortality rate.

Whole blood has been available since the beginning of the Korean operation, and is given to the wounded in the forward areas before they are evacuated to the rear. Plasma substitutes, such as dextran, poly-vinylpyrrolidone, and gelatin are being used to combat shock due to injury, but Col. Potter declared that these substitutes can never replace blood plasma or whole blood.

Methadon, one of the synthetic morphine substitutes, has had a thorough field test, Col. Potter reported. Dose for dose, it was found to have the same pain-killing effect as morphine. It also causes far less nausea and vomiting, an important factor when it is considered that soldiers are moved to the rear by ambulance or plane while still under the influence of narcotics. Chloroquin, the new drug to combat malaria, was initially used last summer in its first test under war conditions. It was found effective as a suppressant, and much more desirable than atabrine, the antimalarial drug familiar to servicemen who fought in the Pacific areas during World War II.

Col. Potter said that chloroquin need be given only once a week instead of once a day, thus making it easier to supervise its administration. It is effective against the malaria-bearing parasites in the blood stream, but does not produce clinical cure of malaria.

The Army is at present testing another new drug called "primaquin," which, if it proves successful, will bring about clinical cure of malaria. It is planned to use chloroquin and primaquin together, thus giving the soldier double protection when he is fighting in malarial countries.

The Army is also experimenting with a water-purifying tablet to replace the chlorine-type tablets now in use. If a soldier does not have a safe water supply at his disposal, the tablet is dropped into his canteen and purifies his drinking water. Many diseases, such as amebic dysentery, are caused by drinking impure water. The

new tablet is said to be more effective as a water purifier than the chlorine tablet.

Col. Potter said that the Army Medical Service has been studying and evaluating a new type of dressing for extensive body burns. The dressing, which is a pad about 3 feet long by 2 feet wide, has on the side touching the patient a fine gauze covering backed up by many sheets of an impermeable material resembling facial tissue.

These sheets soak up the liquid matter which oozes from burn wounds, and prevents it from permeating to the outside of the bandage. This is important in preventing infection, as this liquid matter is an excellent source for growing colonies of germs exhaled from the mouth and throat, with ultimate infection of the burned area.

A bandage which is chemically treated to make it self-adhering is also being given extensive testing. The bandage also has a two-way stretch, so it can be placed tightly and securely over the wounded area without the use of safety pins or tape.

The value of ACTH to war medicine is being investigated in the Far East. It is being used in the treatment of burns, frost bite, and in wounds where the nerves have been injured. Scar tissue, which makes surgical repair of nerves difficult, is prevented by ACTH.

SONGS OLD AND NEW

These songs (some old, some new) are respectfully dedicated to our dear friends, the specialists—and others.

1. Surgeon—"Why Not Take All Of Me?"
2. Pediatrician—"I Cover the Waterfront."
3. Dermatologist—"Every Little Breeze Seems to Whisper Lues."
4. Plastic Surgeon—"It Doesn't Seem Like the Same Old Smile."
5. Psychiatrist—"You Tell Me Your Dream and I'll Tell You Mine."
6. Endocrinologist—"Glandfather's Clock."
7. Obstetrician—"Bali H'ai."
8. Geriatrics—"Dear Hearts and Gentle People" and "What's the Matter with Father?"
9. Orthopedist—"Dry Bones."
10. Cardiologist—"My Heart Cries for You" and "Be Still My Heart."
11. Proctologist—"Cheek to Cheek."
12. Roentgenologist—"I'll Be Seeing You" (also "Me and My Shadow.")
13. G.U.—"Oh, How I Hate to Get Up in the Morning" and "G. U. Are Wonderful."
14. G.I.—"Follow the Swallows."
15. Anesthetist—"Put Me to Sleep With an Old-Fashioned Melody."
16. Eye Specialist—"I'm Looking at the World Through Rose-Colored Glasses."

And we must not forget:

Intern—"The Sheik of Araby."

Resident—"Look for the Silver Lining."

And finally, a heart-rending ballad dedicated to the patient: "My Bill."

—*Detroit Medical News*, May 5, 1951.

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H.R. 3931 MEDICAL ACADEMY

By Mr. Heller, of New York, May 2.

To create the United States Medical Academy.

Referred to the Committee on Interstate and Foreign Commerce.

Comment: Identical with a bill (H.R. 9157) of last Congress by the same author. Would create a medical training school for the armed services and the Public Health Service to be known as "United States Medical Academy." President to select location of the school upon recommendation of Secretary of Defense and Surgeon General of the Public Health Service.

Students would be nominated for admission as follows: Four students for each Senator, Representative, Delegate in Congress and Resident Commissioner from Puerto Rico; six for the District of Columbia; and two by the Governor of the Canal Zone. Candidates for admission to be in age bracket 20 to 25, graduates of a college or university, or possessing the qualifications for entrance to a medical school of the State of which they are residents. Course of study to consist of courses prescribed by the American Medical Association. Upon graduation students would be commissioned and required to serve for five years in a branch of the armed services or in the Public Health or any other federal service.

The Superintendent of the Academy (need not be a physician) would be appointed by the President and confirmed by the Senate for a term of ten years. The Secretary of Defense and the Surgeon General of the Public

Health Service, upon the recommendations of the Superintendent, would jointly fix number of instructors, hours of instruction, and titles by which the several departments of instruction and offices of professor established in the Academy would be known and would fix the compensation of all employees under the provisions of the Classification Act.

A Board of Visitors would be appointed each year made up as follows: Chairmen of the Committees on Armed Services of the Senate and House; Chairman of the Committee on Labor and Public Welfare of the Senate; Chairman of the Committee on Interstate and Foreign Commerce of the House; two other members of the Senate to be appointed by the Vice President, at least one of whom is a member of the Appropriations Committee; two other members of the House to be appointed by the Speaker, one of whom is a member of the Appropriations Committee; and five persons to be appointed by the President, three of whom, at least, shall be outstanding in the fields of medicine or medical research. The Board would inquire into the curriculum, instruction, physical equipment, fiscal affairs, academic methods, and other matters relating to the Academy. Within sixty days after an annual meeting the Board would submit a written report to the President making recommendations (the Board is purely advisory). The Secretary of Defense and Surgeon General of the Public Health Service would prescribe jointly such rules and regulations for the management and administration of the Academy as they find necessary.

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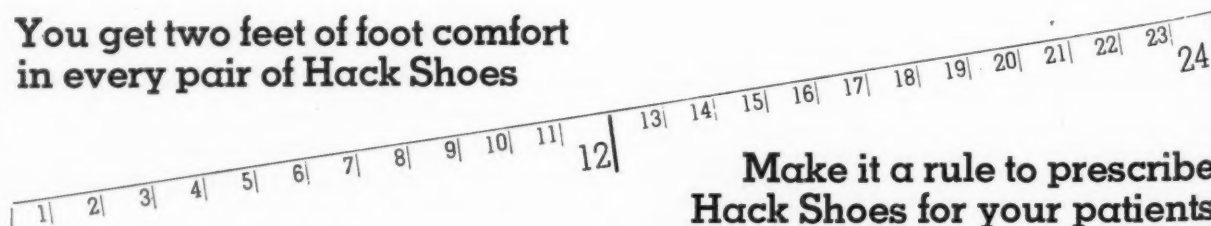
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Acknowledgment of all books received will be made in this column, and this will be deemed by us as full compensation to those sending them. A selection will be made for review, as expedient.

MEDICINE OF THE YEAR. Editorial Direction, John B. Youmans, M.D., Dean, School of Medicine, Vanderbilt University; Internal Medicine, Hugh J. Morgan, M.D., Professor of Medicine, Vanderbilt University; Psychiatry, Franklin G. Ebaugh, M.D., Professor of Psychiatry, University of Colorado; Obstetrics and Gynecology, Frank Whitacre, M.D., Professor of Obstetrics and Gynecology, University of Tennessee; Pediatrics, Mitchell I. Rubin, M.D., Professor of Pediatrics, University of Buffalo and General Surgery, Warren H. Cole, M.D., Professor of Surgery, University of Illinois. Philadelphia: J. B. Lippincott Co., 1951. Price \$5.00.

Medicine of the Year is another in a series of annual reviews of the current medical literature as selected by recognized authorities in each of the various fields of medicine.

The volume is divided into eighteen sections, each of which contains the author's selection of the outstanding advances for 1950 in his particular specialty. The format is pleasing in that each section is prefaced by a concise summary of the contents in heavier type print. This is a very commendable feature which allows the reader to take a quick glance into advances in fields in which he may have less interest and might otherwise entirely pass

by in his reading. Sub-headings in each section are capitalized in large heavy letters making reference easy. A complete bibliography referring to the subject material presented is found at the end of each section, for those who may wish to search out the original article.

The book is printed on a good quality paper with double columns of readily readable print and is recommended as well worth while to those interested in a work of this type. Like preceding volumes of this series the book offers the busy general practitioner an easily readable work to aid him in the space of one or two evenings in keeping abreast of recent advances in all fields.

R. W. B.

ANNOTATED BIBLIOGRAPHY OF VITAMIN E, 1940 to 1950. Compiled by Philip L. Harris and Wilma Kujawski of The Research Laboratories of Distillation Products Industries, Rochester 3, N. Y. (Division of Eastman Kodak Co.) Price \$3.00.

The developments in Vitamin E research during the past ten years has been so great that it has been well-nigh impossible for the chemist, the biologist and the physician to keep abreast of it. Because of these facts, this annotated bibliography has been compiled for the use of those interested in this problem.

A total of 1562 articles have been reviewed and the majority have been summarized. These deal not only with the medical and therapeutic use but there are chapters allotted to Vitamin E's occurrence in nature, its determination, chemistry, physiology, pathology, and

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pharmacology, its value in nutrition and metabolism and its use in Veterinary medicine.

This brochure would be of little use to the average physician but it certainly would be of value in medical libraries and other places of reference. A tremendous amount of effort has been expended in this compilation and even though of limited use, the authors merit acknowledgment of a task well done.

G. W. S.

SURGICAL FORUM. Proceedings of the Forum Sessions Thirty-Sixth Clinical Congress of The American College of Surgeons, Boston, Massachusetts, October, 1950. Surgical Forum Committee: Owen H. Wagensteen, M.D., F.A.C.S., Minneapolis, Chairman; Warren H. Cole, M.D., F.A.C.S., Chicago; Robert E. Gross, M.D., F.A.C.S., Boston; Michael L. Mason, M.D., F.A.C.S., Chicago; Carl A. Moyer, M.D., F.A.C.S., Dallas, and I. S. Ravdin, M.D., F.A.C.S., Philadelphia: W. B. Saunders Co., 1951.

This volume represents the first publication, as a whole, of the papers presented by young men in surgery at the Surgical Forum conducted each year since 1941 by the American College of Surgeons. To Owen H. Wagensteen all credit is due for originating the Surgical Forum. This, the first volume, testifies to the success of the Forum.

In a way the subject material presented in the various papers covers a major part of the surgical research now being conducted in this country. It is a preview of what one may expect to hear more about.

Well printed and illustrated, it is quite up to the

standard one expects of W. B. Saunders Company. The Surgeon will find it an interesting and useful volume to add to his library.

J. H.

THE KIDNEY STRUCTURE AND FUNCTION IN HEALTH AND DISEASE. By Homer W. Smith, A.B., Sc.D., M.S., Professor of Physiology New York University College of Medicine. New York: Oxford University Press, 1951. Price \$12.50.

This is an excellent and exhaustive treatise on the kidney. Portions of the book are highly technical but considerable interesting historical data is interlarded, and the frequent references to the kidneys of various species are appropriate and instructive. Of particular value are the chapters on renal and insulin clearances, experimental methods, renin, traumatic renal failure, excretion data on many drugs, and ACTH and allied adrenal phenomena.

It is replete with references and is a valuable source book. By virtue of its thoroughness, it should discourage any contemporary attempts to write a book on this subject.

A. A. H.

WORKMEN'S PENSIONS AND INDUSTRIAL PHYSICIANS

(Continued from Page 631)

concerned will confer with each other, either personally, by telephone or by correspondence, securing all of the pertinent facts in order that a just opinion can be reached before they take a firm unalterable position on the employee's claim. This is easy to do because either doctor can always express a wish to discuss the problem with his colleague before reaching a final decision. It seems if either of the above suggestions are followed the doctors cannot help but elevate their standing and prestige in the eyes of the public. This action also will do much to cement good relations between industrial and private medicine.

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BON SECOURS HOSPITAL CLINIC DAY

(Continued from Page 627)

USE OF BLOOD, PLASMA, AND BLOOD DERIVATIVES

J. A. KASPER, M.D.

In addition to the replacement of blood loss by whole blood transfusion other indications will be discussed. Some advantages of the use of concentrated erythrocytes after separation from the plasma will also be considered.

Hypoproteinemia is usually hypoalbuminemia. Treatment of hypoproteinemia by plasma transfusion is often not satisfactory because the rise in globulins is without an accompanying elevation of the albumin level. The importance of concentrated serum albumin in the treatment of protein loss, certain hepatic and kidney diseases and the increased metabolism associated with sepsis, supuration and pregnancy is being more widely recognized.

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2. Analysis.
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 - (c) Motility.
 - (d) Cell Count.
 - (e) Morphology of Spermatozoa.
 - (f) Abnormal Varieties.

IV. Appraisal of Fertility.

V. Factors Affecting Fertility.

VI. Recommendations and Treatment.



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ATTENTION INTERNS: Want draft-exempt doctor July 1, 1951, as partner. Guarantee \$1,000.00 per month to start. Will teach surgery. Detroit, Michigan. Write: Box 4, 2020 Olds Tower Building, Lansing 8, Michigan.

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\$5,000.00 accidental death	\$8.00
<i>\$25.00 weekly indemnity, accident and sickness</i>	<i>Quarterly</i>
\$10,000.00 accidental death	\$16.00
<i>\$50.00 weekly indemnity, accident and sickness</i>	<i>Quarterly</i>
\$15,000.00 accidental death	\$24.00
<i>\$75.00 weekly indemnity, accident and sickness</i>	<i>Quarterly</i>
\$20,000.00 accidental death	\$32.00
<i>\$100.00 weekly indemnity, accident and sickness</i>	<i>Quarterly</i>

Cost has never exceeded amounts shown.

Also Hospital Policies for Members, Wives and Children at Small Additional Cost

85c out of each \$1.00 gross income used for members' benefits

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INVESTED ASSETS PAID FOR CLAIMS**

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RESIDENCY IN GENERAL PRACTICE: One year appointment beginning July 1, 1951. Apply Superintendent, Hurley Hospital, Flint, Michigan.

EXCELLENT OPPORTUNITY — MANCERONA, MICHIGAN: Need general practitioner in city of 2,000 in large trading area. Pickle and cheese factories, good schools and churches. Hospitals in Petoskey 39 miles on excellent paved road, also in Traverse City, Cadillac and Grayling. Office space available very reasonable. Contact John A. Lake, Petoskey, Michigan.

The Exhibit Section at the MSMS Annual Session, Grand Rapids, September 26-27-28, 1951, will include the largest number of spaces in the history of the Society—139 booths. This is a greater exhibit than at many national meetings.

In some respects, this year's exhibit will be as interesting and desirable to doctors of medicine as the papers presented in the meeting room. The exhibit section will bring tangible values to those doctors of medicine who inspect it.